APPENDICES

APPENDIX 1: BOSTON HARBOR ISLANDS PARTNERSHIP AND ADVISORY COUNCIL

BOSTON HARBOR ISLANDS PARTNERSHIP MEMBERS AND ALTERNATES

National Park Service
Terry W. Savage, Superintendent, Boston Support Office
George Price, Project Manager, Boston Harbor Islands

U.S. Coast Guard
Captain Charles Beck, Commander, U.S.C.G.: Group Boston
Commander Sue Bibeau

Department of Environmental Management
Peter C. Webber, Commissioner
Peter K. Lewenberg, Executive Office of Environmental Affairs, Special Assistant for Boston Harbor Islands

Metropolitan District Commission
David Balfour, Commissioner
Brian Broderick, Director of Reservations and Historic Sites

Massachusetts Port Authority
Louis A. Cabral, Special Liaison
James Doolin, Deputy Director of Urban Planning and Design

Massachusetts Water Resources Authority
Robert Durand, Secretary, Executive Office of Environmental Affairs and Chair, Massachusetts Water Resources Authority
Douglas B. MacDonald, Executive Director

Boston Office of Environmental Services
Cathleen Douglas Stone, Special Assistant to the Mayor
Andrea d'Amato, Chief of Environmental Services and Transportation

Boston Redevelopment Authority
Linda Mongelli Haar, Director of Planning
Paul McCann, Executive Assistant to the Director

Thompson Island Outward Bound Education Center
Alden I. Gifford, Trustee
George Armstrong, President

The Trustees of Reservations
Richard T. Howe, Director of Property Management
Lisa Vernegaard, Associate Director of Planning and Ecology

Island Alliance
Maynard Goldman, President
Katherine Abbott, Executive Director

Boston Harbor Islands Advisory Council
Edith Andrews, Wampanoag Tribe of Gay Head (Aquinnah)
Rob Moir, President, Save the Harbor/Save the Bay
Phil Lemnios, Town Manager, Town of Hull
Claudia Smith-Reid, Roxbury Multi-Service Center

BOSTON HARBOR ISLANDS ADVISORY COUNCIL MEMBERS AND ALTERNATES

Boston Harbor Islands Related Advocacy Groups
Karen O'Donnell, Peddock's Island Association
Rob Moir, Save the Harbor/Save the Bay
Suzanne Gall Marsh, Volunteers & Friends of the Boston Harbor Islands
Vivien Li, The Boston Harbor Association

Business and Commercial Interests
Peter Davidoff, Bosport Docking-Constitution Marina
Regina Burke, Hull Chamber of Commerce
Bernie Dreiblatt, Combined Jewish Philanthropies
Greg Ketchen, New England Aquarium

Community Groups
Tom Lindberg, Jones Hill Neighborhood Association
Sha-King Alston, Environmental Diversity Forum
Claudia Smith Reid, Roxbury Multi-Service Center
Ed McCabe, Hull Lifesaving Museum

Education and Cultural Organizations
Sherman Morss, Jr., U.S.S. Constitution Museum
Mary Corcoran, Mass Bay Educational Alliance
Jack Wiggin, Urban Harbors Institute
Carl Johnson, South Boston High School

Environmental Organizations
John Lewis, Sierra Club
William D. Giezentanner, Appalachian Mountain Club
Seth Kaplan, Conservation Law Foundation
John Dinga, Massachusetts Marine Educators

Municipalities
Bernice Mader, City of Quincy
David Calnan, Town of Hingham
Phil Lemnios, Town of Hull
Joe Ferrino, Town of Winthrop

Native American Interests
Edith Andrews, Wampanoag Tribe of Gay Head (Aquinnah)
John Sam Sapiel, Penobscot Nation
Lawrence Snake, Delaware Tribe of Western Oklahoma (Anadarko)
Steve Comer, Stockbridge-Munsee Band of Mohican Indians

P.L.104-333

Omnibus Parks and Public Lands Management Act of 1996. Signed 11/12/96

SEC. 1029. BOSTON HARBOR ISLANDS RECREATION AREA.

(a) PURPOSES- The purposes of this section are—

(1) to preserve for public use and enjoyment the lands and waters that comprise the Boston Harbor Islands National Recreation Area;

(2) to manage the recreation area in partnership with the private sector, the Commonwealth of Massachusetts, municipalities surrounding Massachusetts and Cape Cod Bays, the Thompson Island Outward Bound Education Center, and Trustees of Reservations, and with historical, business, cultural, civic, recreational and tourism organizations;

(3) to improve access to the Boston Harbor Islands through the use of public water transportation; and

(4) to provide education and visitor information programs to increase public understanding of and appreciation for the natural and cultural resources of the Boston Harbor Islands, including the history of Native American use and involvement.

(b) DEFINITIONS- For the purposes of this section—

(1) the term recreation area means the Boston Harbor Islands National Recreation Area established by subsection (c); and

(2) the term 'Secretary' means the Secretary of the Interior.

(c) Boston Harbor Islands National Recreation Area-

(1) ESTABLISHMENT-In order to preserve for the benefit and inspiration of the people of the United States as a national recreation area certain lands located in Massachusetts Bay, there is established as a unit of the National Park System the Boston Harbor Islands National Recreation Area.

(2) BOUNDARIES- (A) The recreation area shall be comprised of the lands, waters, and submerged lands generally depicted on the map entitled 'Proposed Boston Harbor Islands NRA', numbered BOHA 80,002, and dated September 1996. Such map shall be on file and available for public inspection in the appropriate offices of the National Park Service. After advising the Committee on Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate, in writing, the Secretary may make minor revisions of the boundaries of the recreation area when necessary by publication of a revised drawing or other boundary description in the Federal Register.

(B) The recreation area shall include the following:

(i) The areas depicted on the map reference in subparagraph (A).

(ii) Landside points required for access, visitor services, and administration in the city of Boston along its Harborwalk and at Long Wharf, Fan Pier, John F. Kennedy Library, and the Custom House; Charlestown Navy Yard; Old Northern Avenue Bridge; the city of Quincy at Squantum Point/Marina Bay, the Fore River Shipyard, and Town River; the Town of Hingham at Hewitt's Cove; the Town of Hull; the city of Salem at Salem National Historic Site; and the city of Lynn at the Heritage State Park.

(d) ADMINISTRATION OF RECREATION AREA-

(1) IN GENERAL- The recreation area shall be administered in partnership by the Secretary, the Commonwealth of Massachusetts, City of Boston and its applicable subdivisions and others in accordance with the provisions of law generally applicable to units of the National Park System, including the Act entitled 'An Act to establish a National Park Service, and for other purposes', approved August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2, 3, and 4), and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461-467) as amended and supplemented and in accordance with the integrated management plan specified in subsection (f).

(2) STATE AND LOCAL JURISDICTION- Nothing in this section shall be construed to diminish, enlarge, or modify any right of the Commonwealth of Massachusetts or any political subdivision thereof, to exercise civil and criminal jurisdiction or to carry out State laws, rules, and regulations within the recreation area, including those relating to fish and wildlife, or to tax persons, corporations, franchises, or private property on the lands and waters included in the recreation area.

(3) COOPERATIVE AGREEMENTS- The Secretary may consult and enter into cooperative agreements

with the Commonwealth of Massachusetts or its political subdivisions to acquire from and provide to the Commonwealth or its political subdivisions goods and services to be used in the cooperative management of lands within the recreation area, if the Secretary determines that appropriations for that purpose are available and the agreement is in the best interest of the United States.

(4) CONSTRUCTION OF FACILITIES ON NON-FEDERAL LANDS- In order to facilitate the administration of the recreation area, the Secretary is authorized, subject to the appropriation of necessary funds in advance, to construct essential administrative or visitor use facilities on non-Federal public lands within the recreation area. Such facilities and the use thereof shall be in conformance with applicable plans

(5) OTHER PROPERTY, FUNDS, AND SERVICES- The Secretary may accept and use donated funds, property, and services to carry out this section.

(6) RELATIONSHIP OF RECREATION AREA TO BOSTON-LOGAN INTERNATIONAL AIRPORT- With respect to the recreation area, the present and future maintenance, operation, improvement and use of Boston-Logan International Airport and associated flight patterns from time to time in effect shall not be deemed to constitute the use of publicly owned land of a public park, recreation area, or other resource within the meaning of section 303(c) of title 49, United States Code, and shall not be deemed to have a significant effect on natural, scenic, and recreation assets within the meaning of section 47101(h)(2) of title 49, United States Code.

(7) MANAGEMENT IN ACCORDANCE WITH INTEGRATED MANAGEMENT PLAN- The Secretary shall preserve, interpret, manage, and provide educational and recreational uses for the recreation area, in consultation with the owners and managers of lands in the recreation area, in accordance with the integrated management plan.

(e) Boston Harbor Islands Partnership Establishment-

(1) ESTABLISHMENT- There is hereby established the Boston Harbor Islands Partnership whose purpose shall be to coordinate the activities of Federal, State, and local authorities and the private sector in the development and implementation of an integrated resource management plan for the recreation area.

(2) MEMBERSHIP- The Partnership shall be composed of 13 members, as follows:

(A) One individual, appointed by the Secretary, to represent the National Park Service.

(B) One individual, appointed by the Secretary of Transportation, to represent the United States Coast Guard.

(C) Two individuals, appointed by the Secretary, after consideration of recommendations by the Governor of Massachusetts, to represent the Department of Environmental Management and the Metropolitan District Commission.

(D) One individual, appointed by the Secretary, after consideration of recommendations by the Chair, to represent the Massachusetts Port Authority.

(E) One individual, appointed by the Secretary, after consideration of recommendations by the Chair, to represent the Massachusetts Water Resources Authority.

(F) One individual, appointed by the Secretary, after consideration of recommendations by the Mayor of Boston, to represent the Office of Environmental Services of the City of Boston.

(G) One individual, appointed by the Secretary, after consideration of recommendations by the Chair, to represent the Boston Redevelopment Authority.

(H) One individual, appointed by the Secretary, after consideration of recommendations of the President of the Thompson Island Outward Bound Education Center, to represent the Center.

(I) One individual, appointed by the Secretary, after consideration of recommendations of the Chair, to represent the Trustees of Reservations.

(J) One individual, appointed by the Secretary, after consideration of recommendations of the President of the Island Alliance, to represent the Alliance, a nonprofit organization whose sole purpose is to provide financial support for the Boston Harbor Islands National Recreation Area.

(K) Two individuals, appointed by the Secretary, to represent the Boston Harbor Islands Advisory Council, established in subsection (g).

(3) TERMS OF OFFICE; REAPPOINTMENT- (A) Members of the Partnership shall serve for terms of three years. Any member may be reappointed for one additional 3-year term.

(B) The Secretary shall appoint the first members of the Partnership within 30 days after the date on which the Secretary has received all of the recommendations for appointment pursuant to subsections (b)(3), (4), (5), (6), (7), (8), (9), and (10).

(C) A member may serve after the expiration of his or her term until a successor has been appointed.

(4) COMPENSATION- Members of the Partnership shall serve without pay, but while away from their homes or regular places of business in the performance of services for the Partnership, members shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in the Government service are allowed expenses under section 5703 of title 5, United States Code.

(5) ELECTION OF OFFICERS- The Partnership shall elect one of its members as Chairperson and one as Vice Chairperson. The term of office of the Chairperson and Vice Chairperson shall be one year. The Vice Chairperson shall serve as chairperson in the absence of the Chairperson.

(6) VACANCY- Any vacancy on the Partnership shall be filled in the same manner in which the original appointment was made.

(7) MEETINGS- The Partnership shall meet at the call of the Chairperson or a majority of its members.

(8) QUORUM- A majority of the Partnership shall constitute a quorum.

(9) STAFF OF THE PARTNERSHIP- The Secretary shall provide the Partnership with such staff and technical assistance as the Secretary, after consultation with the Partnership, considers appropriate to enable the Partnership to carry out its duties. The Secretary may accept the services of personnel detailed from the Commonwealth of Massachusetts, any political subdivision of the Commonwealth or any entity represented on the Partnership.

(10) HEARINGS- The Partnership may hold such hearings, sit and act at such times and places, take such testimony, and receive such evidence as the Partnership may deem appropriate.

(11) DONATIONS- Nothwithstanding any other provision of law, the Partnership may seek and accept donations of funds, property, or services from individuals, foundations, corporations, and other private and public entities for the purpose of carrying out this section.

(12) USE OF FUNDS TO OBTAIN MONEY- The Partnership may use its funds to obtain money from any source under any program or law requiring the recipient of such money to make a contribution in order to receive such money.

(13) MAILS- The Partnership may use the United States mails in the same manner and upon the same conditions as other departments and agencies of the United States.

(14) OBTAINING PROPERTY- The Partnership may obtain by purchase, rental, donation, or otherwise, such property, facilities, and services as may be needed to carry out its duties, except that the Partnership may not acquire any real property or interest in real property.

(15) COOPERATIVE AGREEMENTS- For purposes of carrying out the plan described in subsection (f), the Partnership may enter into cooperative agreements with the Commonwealth of Massachusetts, any political subdivision thereof, or with any organization or person.

(f) Integrated Resource Management Plan-

(1) IN GENERAL- Within three years after the date of enactment of this Act, the Partnership shall submit to the Secretary a management plan for the recreation area to be developed and implemented by the Partnership.

(2) CONTENTS OF PLAN- The plan shall include (but not be limited to) each of the following:

(A) A program providing for coordinated administration of the recreation area with proposed assignment of responsibilities to the appropriate governmental unit at the Federal, State, and local levels, and nonprofit organizations, including each of the following:

(i) A plan to finance and support the public improvements and services recommended in the plan, including allocation of non-Federal matching requirements set forth in subsection (h)(2) and a delineation of profit sector roles and responsibilities.

(ii) A program for the coordination and consolidation, to the extent feasible, of activities that may be carried out by Federal, State, and local agencies having jurisdiction over land and waters within the recreation area, including planning and regulatory responsibilities.

(B) Policies and programs for the following purposes:

(i) Enhancing public outdoor recreational opportunities in the recreation area.

(ii) Conserving, protecting, and maintaining the scenic, historical, cultural, natural and scientific values of the islands.

(iii) Developing educational opportunities in the recreation area.

(iv) Enhancing public access to the Islands, including development of transportation networks.

(v) Identifying potential sources of revenue from programs or activities carried out within the recreation area.

(vi) Protecting and preserving Native American burial grounds connected with the King Philip's War internment period and other periods.

(C) A policy statement that recognizes existing economic activities within the recreation area.

(3) DEVELOPMENT OF PLAN- In developing the plan, the Partnership shall—

(A) consult on a regular basis with appropriate officials of any local government or Federal or State agency which has jurisdiction over lands and waters within the recreation area;

(B) consult with interested conservation, business, professional, and citizen organizations; and

(C) conduct public hearings or meetings for the purposes of providing interested persons with the opportunity to testify with respect to matters to be addressed by the plan.

(4) APPROVAL OF PLAN-

(A) The Partnership shall submit the plan to the Governor of Massachusetts for review. The Governor shall have 90 days to review and make any recommendations. After considering the Governor's recommendations, the Partnership shall submit the plan to the Secretary, who shall approve or disapprove the plan within 90 days. In reviewing the plan the Secretary shall consider each of the following:

(i) The adequacy of public participation.

(ii) Assurances of plan implementation from State and local officials.

(iii) The adequacy of regulatory and financial tools that are in place to implement the plan.

(B) If the Secretary disapproves the plan, the Secretary shall within 60 days after the date of such disapproval, advise the Partnership in writing of the reasons therefore, together with recommendations for revision. Within 90 days of receipt of such notice of disapproval, the Partnership shall revise and resubmit the plan to the Secretary who shall approve or disapprove the revision within 60 days.

(5) INTERIM PROGRAM- Prior to adoption of the Partnership's plan, the Secretary and the Partnership shall assist the owners and managers of lands and waters within the recreation area to ensure that existing programs, services, and activities that promote the purposes of this section are supported.

(g) BOSTON HARBOR ISLANDS ADVISORY COUNCIL-

(1) ESTABLISHMENT- The Secretary, acting through the Director of the National Park Service, shall establish an advisory committee to be known as the Boston Harbor Islands Advisory Council. The purpose of the Advisory Council shall be to represent various groups with interests in the recreation area and make recommendations to the Boston Harbor Islands Partnership on issues related to the development and implementation of the integrated resource management plan developed under subsection (f). The Advisory Council is encouraged to establish committees relating to specific recreation area management issues, including (but not limited to) education, tourism, transportation, natural resources, cultural and historic resources, and revenue raising activities. Participation on any such committee shall not be limited to members of the Advisory Council.

(2) MEMBERSHIP- The Advisory Council shall consist of not fewer than 18 individuals, to be appointed by the Secretary, acting through the Director of the National Park Service. The Secretary shall appoint no fewer than three individuals to represent each of the following categories of entities: municipalities; educational and cultural institutions; environmental organizations; business and commercial entities, including those related to transportation, tourism and the maritime industry; and Boston Harbor-related advocacy organizations; and organizations representing Native American interests.

(3) PROCEDURES- Each meeting of the Advisory Council and its committees shall be open to the public.

(4) FACA- The provisions of section 14 of the Federal Advisory Committee Act (5 U.S.C. App.), are hereby waived with respect to the Advisory Council.

(h) AUTHORIZATION OF APPROPRIATIONS-

(1) IN GENERAL- There are authorized to be appropriated such sums as may be necessary to carry out this section, provided that no funds may be appropriated for land acquisition.

(2) MATCHING REQUIREMENT- Amounts appropriated in any fiscal year to carry out this section may only be expended on a matching basis in a ration of at least three non-Federal dollars to every Federal dollar. The non-Federal share of the match may be in the form of cash, services, or in-kind contributions, fairly valued.

P.L. 106-176

Omnibus Parks Technical Corrections Act of 2000. H.R. 149, Signed 3/10/00

SEC. 126. BOSTON HARBOR ISLANDS NATIONAL RECREATION AREA.

Section 1029 of division I of the Omnibus Parks Act (110 Stat. 4232; 16 U.S.C. 460kkk) is amended as follows:

(1) In the section heading, by striking `recreation area' and inserting `national recreation area'.

(2) In subsection (b)(1), by inserting quotation marks around the term `recreation area'.

(3) In subsection (e)(3)(B), by striking `subsections (b)(3), (4), (5), (6), (7), (8), (9), and (10).' and inserting `subparagraphs (C), (D), (E), (F), (G), (H), (I), and (J) of paragraph (2).'.

(4) In subsection (f)(2)(A)(i), by striking `profit sector roles' and inserting `private-sector roles'.

(5) In subsection (g)(1), by striking `and revenue raising activities.' and inserting `and revenue-raising activities.'.

(6) In subsection (h)(2), by striking `ration' and inserting `ratio'.

P.L. 105-355

TITLE I—AUTOMOBILE NATIONAL HERITAGE AREA OF MICHIGAN

SEC. 513. LAND ACQUISITION, BOSTON HARBOR ISLANDS RECREATION AREA. Signed 11/6/98

Section 1029(c) of division I of the Omnibus Parks and Public Lands Management Act of 1996 (Public Law 104-333; 110 Stat. 4233; 16 U.S.C. 460kkk(c)) is amended by adding at the end the following new paragraph:

(3) LAND ACQUISITION- Notwithstanding subsection (h), the Secretary is authorized to acquire, in partnership with other entities, a less than fee interest in lands at Thompson Island within the recreation area. The Secretary may acquire the lands only by donation, purchase with donated or appropriated funds, or by exchange.'.

P.L. 102-525

TITLE V—BOSTON HARBOR ISLANDS STUDY

SEC. 501. BOSTON HARBOR ISLANDS STUDY. Signed 10/26/92

(a) IN GENERAL- The Secretary of the Interior shall, within 1 year after the date of the enactment of this title, conduct a study of the Boston Harbor Islands to assess the opportunities for the National Park Service to contribute to State, regional, and local efforts to promote the conservation of the Boston Harbor Islands and their use and enjoyment by the public. In conducting the study, the Secretary shall—

(1) consult closely with and explore means for expanded cooperation with the Massachusetts Department of Environmental Management, the Metropolitan District Commission, and the City of Boston;

(2) evaluate the suitability of establishing the Boston Harbor Islands as a unit of the National Park System;

(3) assess the opportunities for expanded tourism, public education, and visibility by managing the Boston Harbor Islands in conjunction with units of the National Park System in the vicinity, including the Adams National Historic Site in Quincy, Massachusetts; and

(4) evaluate the possibility for developing ferry service and other transportation links among those units to enhance their public use and enjoyment.

(b) REPORT- The Secretary of the Interior shall submit to the Congress a report on the findings, conclusions, and recommendations of the study under subsection (a), by not later than 1 year after the date of the enactment of this title.

APPENDIX 3: THE ISLANDS OF BOSTON HARBOR

The following island descriptions are based on the Boston Harbor Islands Report of a Special Resource Study*, 1994 by the National Park Service. Each island's managing agency is identified in parentheses.*

Bumpkin Island (DEM)
Thirty-five acres in area, Bumpkin Island was used by fishing and farming people from the 1600s. It was farmed until 1682, when its owner, Samuel Ward, donated it to Harvard College. The island was apparently used as a place to dry fish and farm in the 1800s, and in 1901 a hospital for paraplegic children was located on top of the island's drumlin. In 1917, the U.S. Navy was given use of the island and built barracks for some 1300 sailors there the next year; the 58-building complex was razed after the war.

The stone foundations of a farmhouse, the ruins of the children's hospital, and a derelict orchard remain today as evidence of the human uses of the island. There are twelve campsites, three picnic areas, hiking trails, and wooded areas but no potable water on the island. Bumpkin has a dock and is served by the water shuttle. The island is owned by the state and managed by DEM.

Button Island (Town of Hingham)
One of the Hingham Harbor Islands, Button is less than one acre in area, and its rocky shoreline makes it difficult to approach by boat.

Calf Island (DEM)
A 17-acre island north of Great Brewster, Calf Island was for some years home to a colony of lobster fishermen and is the site of a spot called "the Lonely Grave," where fishermen are said to have buried shipwreck victims. Illegal boxing matches were also allegedly staged here on summer Sundays. In 1902 Benjamin P. Cheney and his wife, the actress Julia Arthur, built a large estate on a cliff overlooking the southeastern shore. The mansion and boathouse were destroyed by fire after World War II; only one chimney is still standing.

Calf Island has a brackish pond and tidal marshes, as well as wild cherry, beach plum, tall grasses, and wildflowers. There is no dock, and access is discouraged.

Deer Island (MWRA)
Deer Island's human history is nearly as varied as that of Long Island. Nearly a mile long and 210 acres in area, it is the second-largest island in the harbor. Farmed in the 1700s, it is said to have acquired its name from the fact that mainland wolves drove deer to the island across Shirley Gut, a channel that was filled in 1936. Hunters thus favored the island from an early time, at least until Colonial-era lumbering left the island largely deforested. During King Philip's War (c. 1675), Deer Island was used as an internment camp for American Indians captured in the war. The island was fortified in World War II.

In the early 19th century Deer Island was a popular summer resort, but an 1847 outbreak of smallpox prompted the creation of a quarantine hospital here. In 1858, this facility became the House of Reformation, for delinquent young boys; in 1896 it was again reconstituted as the Suffolk County House of Corrections. Used until just recently, the facility was relocated to the South Bay area to accommodate the current expansion of the Massachusetts Water Resources Authority (MWRA) sewage treatment plant.

The MWRA plant is the most recent of a series of wastewater facilities that have been located on the island since 1889. In that year, a sewage pumping station was installed next to the House of Reformation. By the 1950s, the station was modified to treat sewage, and in 1968 the Metropolitan District Commission (MDC), predecessor agency to MWRA, expanded the facility to serve as the main treatment plant for the 43 cities and towns embraced by the authority. When the Boston Harbor Project was initiated in 1985, Boston transferred ownership of Deer Island to MWRA. The Deer Island facility will be the largest sewage treatment plant in New England when construction is complete in 2001.

Connected by land to the town of Winthrop, Deer Island consisted of two drumlins. The one in the center of the island was leveled for the first treatment plant; in the current expansion, the hill was shifted to the north side of the island to create a buffer that would mitigate the impacts of plant construction and operation. From this hill, visitors to the island will once again be able to see the town of Winthrop. Ring-necked pheasants, red-winged blackbirds, and other songbirds populate the island.

Gallop's Island (DEM)
Just west of George's and Lovell's islands, Gallop's Island is named for Captain John Gallop and was farmed in the 1700s and early 1800s. The 16-acre island, comprised of a high drumlin surrounded by shrubs and trees, was in the 1830s a popular summer resort with an inn and restaurant, whose trade was perhaps enhanced by the island's romantic association with pirates. Harbor historian Edward Rowe Snow claimed that the pirate Long Ben Avery buried a fabulous treasure of diamonds on the island. Just north of Gallop's on Nix's Mate (a channel marker that once was an island), pirates are said to have been hung from chains before being buried as a warning against illegal maritime activity.

Gallop's Island's resort years ended in 1866 when it became first a Civil War camp, and then the new site of the quarantine station that had earlier operated on Deer Island. Then, in 1916, the United States Public Health Service established an immigration station on the island to process thousands of immigrants entering the United States through Boston. During the Second World War, a U.S. Maritime Radio School occupied Gallop's Island; foundations of both can still be seen. In 1947, the federal government sold the island at public auction, and for some time it served as a dump for building debris.

Gallop's is served by the water shuttle. A public dock is open during the summer season.The island features a sandy beach, and visitors find impressive views of Boston Light and the city skyline from its grassy bluffs. There are trails, picnic areas, and composting toilets, but no water is available.

George's Island (MDC)
Granted to James Pemberton in the 1600s, George's Island is significant largely for its strategic location, just south of the main ship channel in Boston Harbor and just north of the shipping channel known as Nantasket Roads. Its position may explain why the 28-acre island became a federal property in 1825 and why, eight years later, Fort Warren was built on it.

Today, the island is largely occupied by the fort, a partially restored National Historic Landmark. During the Civil War, Union soldiers were trained here and Confederate soldiers imprisoned. Historian Edward Rowe Snow has asserted that Fort Warren "has more memories of the Civil War days than any other place in New England." Another historian has claimed that soldiers working on the fort's parade ground invented the lyrics to "John Brown's Body." Set to the tune of a popular hymn, the song was so popular among Union troops that President Lincoln is alleged to have asked Julia Ward Howe to write a patriotic poem to the same melody, what became "The Battle Hymn of the Republic."

Today, George's Island is the centerpiece of the 16 islands that form Boston Harbor Islands State Park. Seven miles from downtown Boston, the island contains the park's visitor center, a large dock, picnic grounds, and a gravel beach. It is operated for the state by the Metropolitan District Commission and accessible by passenger ferry from Long Wharf, Hewitts Cove in Hingham, and Lynn.

Grape Island (DEM)
Native Americans are said to have favored the tidal flats of this 50-acre island for shellfishing. Archeologists have discovered middens on Grape Island. Known for its abundant grapes in Colonial times, the island was the site of a Revolutionary skirmish known as the Battle of Grape Island.

Just 500 yards from the mainland at Weymouth, the island is essentially two large drumlins, one of them more than 70 feet above sea level, with widely different topography at each end. One flat-topped drumlin ends in rock outcroppings at the northern end; the southern end is a gradual slope with tidal salt marshes and swimming beaches. This low-lying southern end features a thick cover of bayberry and blackberry shrubs that support a large population of songbirds. There are also wooded areas and excellent views of the mainland; thus the island is popular with runners and hikers. Grape Island offers picnic areas, campsites, trails, and the remains of a farmhouse, and it is accessible by water shuttle during the summer season.

The Graves (U.S. Coast Guard)
The one-acre island known as The Graves has been home to the harbor's outermost lighthouse since the turn of this century. After Broad Sound Passage had been deepened to improve navigation, Graves Light was built on a rocky ledge overlooking the channel. The island is named for the 17th-century admiral Thomas Graves, but it is popularly associated with the "watery graves" surrounding it from numerous shipwrecks on and near its jagged rocks. Although shipwrecks may have been more numerous around Boston Light, the disasters at The Graves were often more dramatic. In 1938, the wreck of the *City of Salisbury*, a freighter carrying animals, inspired tourists throughout the summer to come and inspect the remains of the "zoo ship." Three years later, 18 of the 23 crew members of the fishing schooner *Mary E. O'Hara* perished after the vessel suddenly went down in 40 feet of water. The crew had climbed the masts, which remained above water, but during the cold night most dropped into the sea as their frozen hands could no longer sustain a grip. Only five survived.

The Graves is now the site of an automated lighthouse operated by the U.S. Coast Guard.

Great Brewster (DEM)
At 23 acres, Great Brewster is the largest of the nine islands in the Brewster chain and the only one of this group with a drumlin. This central drumlin rises about 100 feet above sea level. Deeply eroded ledges and a small drumlin mark the southern end of the island, and a salt marsh occupies the middle. Farming may have taken place on the island, and in the mid-1800s it was protected by a federally funded sea wall, parts of which are eroded today.

It has been asserted that the town of Hull built a lighthouse on Great Brewster in 1681, fully 35 years before Boston Light was built. With its command of the outer harbor and broad views of distant points, Great Brewster also served as a command post with a bomb- and chemical-proof system of bunkers in World War II; it also had strategic importance in the earlier world war.

Some wooded areas exist on Great Brewster, but the severe weather in this most exposed section of the harbor has made vegetation generally sparse. Sumac shrubs and a few larger trees grow, and open fields are full of wild roses. The island offers, however, tidal pools that abound in such marine life as periwinkles, blue mussels, barnacles, starfish, crabs, and sea anemones. The island is also home to a large gull colony. Great Brewster is currently not staffed for visitors, although visitors in private craft do beach or moor their boats.

Green Island (DEM)
Like its neighbor, Little Calf, Green Island is an outcropping of about an acre covered only with shrubs and grasses. Like Calf and Middle Brewster, the island is said to have been inhabited for some unspecified time by lobstermen, and local historian Snow asserted that a hermit lived here as well. The island takes its name from a merchant who owned it in Colonial times, and today it is a nesting site for gulls and cormorants. Public use of the island is discouraged.

Hangman Island (DEM)
This quarter-acre island of rock outcrop lies in the middle of Quincy Bay; it used to be much larger.

Langlee Island (Town of Hingham)
This four-acre island located at the mouth of Hingham Harbor features two sandy beaches and is a favorite picnicking place among boaters. The island has a rock formation called puddingstone, with shapes, sizes, and colors swirled together in such a way as to resemble a pudding.

Little Brewster (U.S. Coast Guard)
This four-acre island is best known as the home of Boston Light (1716), the first lighthouse to be built in the United States and the last to be staffed. A National Historic Landmark, the lighthouse flew the Union Jack each time it sighted an approaching ship—a signal to observers at Castle Island that the city should prepare its defenses. Today, Boston Light can be seen 27 miles away in clear weather. Three years after Boston Light was built, the colony installed a cannon on the island whose shot would guide ships in distress during thick fog. This cannon, the first fog signal in the Coast Guard, has recently been restored and returned to the small Coast Guard museum in the base of the lighthouse.

Variously known as Lighthouse or Beacon Island, Little Brewster has a rugged shore of cliffs, ledges, and beach. The ocean-facing side of the island is eroding significantly. At low tide, a sandbar connects the small island to Great Brewster. On the island are the lighthouse keeper's three-bedroom house, a structure housing a 250-gallon cistern, two other small buildings, and a pier. Access is entirely by private vessel.

Little Calf Island (DEM)
Less than an acre in extent, Little Calf lies just 100 feet north of Calf Island. It is largely an outcropping of bedrock that provides nesting sites for cormorants, herring gulls, and black-backed gulls. DEM discourages recreational use of Little Calf.

Lovell's Island (MDC)
Located one-and-a-half miles from Deer Island and separated from Gallop's Island by the shipping channel called The Narrows, this 62-acre island is named for Captain William Lovell, an early settler of Dorchester. Used for agriculture in its earliest days, the island is best known for the shipwreck of the 74-gun French warship *Magnifique* that occurred off its inner shore in the 1700s. Lovell's Island was fortified before and during the First World War. Four gun batteries that predate the war and other military structures from the wartime outpost Fort Standish remain on the island.

Accessible by private craft and by public water shuttle from George's Island, Lovell's offers a supervised swimming beach, boat and fishing piers, picnic grounds, walking trails, permit camping, and public restrooms. It also features salt marshes, woods, meadows, and dunes.

Long Island (City of Boston)
The largest (214 acres) and longest (1.75 miles) of the Boston Harbor Islands, Long Island has an involved and varied human history. Archeologists believe that prehistoric habitation sites may exist on the island, which was occupied by some 40 tenant farming families beginning in 1634. Once densely forested, the island was largely cut over in Colonial times after Massachusetts Bay Colony legislators authorized lumbering on the islands in 1630. By the time of the Revolution, Yankee privateers established batteries on the island from which they destroyed one British transport.

Until the Civil War, however, the island appears to have been relatively quiet save the 1819 construction of Long Island Light. Then, in 1863, an artillery encampment was established on the island. Named Camp Wightman and renamed Fort Strong, it served as an important Civil War conscript center; near it lie the remains of 79 Civil War soldiers. Fort Strong did not again see major use until the First World War, when 500 soldiers were stationed there. Its guns obsolete by the next world war, Fort Strong was abandoned; though still standing, it is now in disrepair. In 1950, a Nike missile base was established on the island; after its abandonment, the base was used to store hundreds of thousands of books for the Boston Public Library.

During much of the 19th century, Long Island was a resort where illicit prize fights are said to have been staged. Mansions, more modest summer houses, and community centers were built on the island, and for about 30 years a colony of Portuguese fishermen lived there. Then, in 1882, the City of Boston acquired the island's largest resort hotel and by 1891 had converted it into a poorhouse for 650 people. So began more than a century of use of the island for dependent populations. In 1921 the almshouse was converted into a home and hospital for unwed mothers; seven years later an addition was built to house homeless men. In 1941 the facility was again enlarged to provide treatment for alcoholics. This 60-acre Long Island Chronic Care Hospital, administered by the city, the state, and a private nonprofit health-care group, included a 400-bed homeless shelter, a mental health extended-care facility for homeless people, and centers for the treatment of alcohol and drug abuse. Although the hospital is no longer in operation, the city operates drug and alcohol treatment programs, a homeless shelter, and several other human service programs on Long Island. The city is planning to build a facility to treat adolescents with drug and alcohol dependency, while it is also exploring ways to open the island's parade grounds and Long Island Head for pedestrians and bicyclists.

The island not only preserves evidence of some of its human past, but its natural features are also remarkable—three drumlins, dune beaches, open meadow, a saltwater marsh, and a dense pine grove on its southern side. Its wooded areas of fruit and poplar trees and sumac thickets make the island a favorite habitat for ring-necked pheasants, songbirds, and cottontail rabbits. Owned by city of Boston, Long Island is connected through the Squantum area of Quincy by causeway and to Moon Island by bridge.

Middle Brewster (DEM)
The least accessible of all the harbor islands, Middle Brewster was first settled by a colony of fishermen in the 1840s, and for many years its shores were considered a bountiful source of fish and lobsters. In the late 1800s, wealthy yachtsman Augustus Russ owned the island and built a summer home for himself on it; he also leased land to other seasonal residents. But its situation and topography—it is a high, 12-acre outcropping of ledge surrounded by underwater ledges and jagged stone invisible in high tide—made it less than welcoming, and it is today chiefly valued for its wildlife. Two species of heron have established rookeries on the island's southeast corner, and DEM discourages recreational uses there.

Moon Island (City of Boston)
Like many other harbor islands, Moon was originally used for crops and livestock pasture. The 44-acre island was also the site of a Revolutionary skirmish. In 1878 it was selected to become home to what was then considered the most modern sewage treatment and disposal facility in the world. Here the City of Boston built a series of tunnels and massive granite settling tanks in the 1880s, which operated until the job was taken over by more advanced plants on Nut and Deer islands. Today, the old settling tanks cover almost half of the island, but from Moon Island's single drumlin visitors find excellent views of the city and the harbor. The island was put to other municipal uses in 1959 and 1960. First, on the northern end of the island, the Boston Fire Department built a facility that re-creates different Boston rooftops for training firefighters; then the Boston Police Department set up a firing range on the southern end. This firing range is scheduled for expansion. The island is not open to the public.

Moon Island is connected to the mainland at the Squantum section of Quincy by a two-lane causeway and is linked by bridge to Long Island. The island offers a coarse-sand beach of some 52,000 square feet, and fauna include songbirds, squirrels, skunks, and other small animals. It is owned by the City of Boston.

Nix's Mate (U.S. Coast Guard)
What once was a 12-acre island is now a channel marker with a distinctive black-and-white-striped buoy built under the auspices of the Boston Marine Society. Legend ascribes a pirate warning to Nix's Mate: captured pirates were said to have been hung in Boston Common and displayed in chains on the island.

Nut Island (MWRA)
Originally only 4 acres, Nut Island became a 17-acre peninsula when the shallow waters between it and Quincy were filled. It is now the end of the arm that separates Quincy and Hingham bays.

In Colonial times, Nut Island was apparently used to pasture cattle, which were driven back to the mainland over sandbars at low tide. In 1876, a local foundry used the island to test ordnance; 15-inch guns were installed here to shoot projectiles as heavy as 500 pounds at targets on the island. By the end of the 19th century, the Metropolitan District Commission assumed control of Nut Island and established a sewage treatment plant, now outmoded and scheduled for removal. A new headworks, which screens large objects, sand, and gravel from wastewater, will be built on Nut Island; here too are facilities to capture such floatable pollutants as grease, oil, and plastics. On completion of the project, Nut Island will also have a small park.

Outer Brewster Island (DEM)
Outer Brewster Island is a treeless, grass- and brush-covered island of 17.5 acres. It is the largest outcrop of

solid bedrock in Boston Harbor, a fact that motivated its owner, Nathaniel Austin, and his son to open and operate a paving stone quarry on the northeast end of the island in the early 19th century. Otherwise, until the Second World War, the island stood mostly undisturbed. In 1941, the U.S. Army built an installation here known as Battery Jewell, a bomb- and chemical-proof enclosure holding radar-controlled guns and ammunition storage chambers. There were also barracks for 125 men and a desalinization plant at the battery, deactivated in 1946.

On the northwest end is Pulpit Rock, so named for the sermon-like sound the wind makes as it sweeps over its flat top. Visitation is discouraged.

Peddock's Island (MDC)
The third-largest (188 acres) of the Boston Harbor Islands, Peddock's Island is a quarter of a mile from Hull across Hull Gut. It has the longest shoreline of any island in the harbor and is composed of five drumlins connected by sand or gravel bars called tombolos. It is one of few harbor islands to yield evidence of possible prehistoric habitation (as opposed to simple use): in the late 1960s, a summer resident digging in her garden unearthed a male skeleton that carbon dating established to be 4,100 years old. It is the oldest skeleton ever found in New England. Peddock's, unlike nearly every other island in Boston Harbor, remains inhabited; it is the only one with a year-round population (albeit small; only two people live here), and numerous families still summer on Peddock's, even though it has no telephones or electricity. There is still a chapel on the island.

Peddock's Island had been used by farmers since 1634, when it was granted to Charlestown. But its proximity to the mainland gave it a prominent military role. It is said to have been the site of a patriot infantrymen's raid on a Loyalist farm; 800 cattle and sheep were confiscated from the island farm and taken to the mainland. In 1776, some 600 Patriot militiamen were stationed on the island to guard the harbor against the return of British troops.

In 1900, the federal government built Fort Andrews on Peddock's Island; it is likely eligible for the National Register. Today, 26 structures, including guardhouses, prisoner-of-war barracks, stables, a gymnasium, and a firehouse, stand in various states of disrepair on an 88-acre site on the island's east head.

The island with its fort is owned by the state and managed by MDC, the island features varied environments. On its east head are dense woods of maple, pine, apple, cottonwood, and birch. A popular sand spit beach with dunes, beach plums, and wild roses is in the middle of the island, and on the west end is a salt marsh with marsh grass, cattails, and milkweed. Camping is allowed by permit only, and people use the island for hiking and sightseeing. It has modest visitor facilities, including public toilets, and is accessible by public vessel.

Raccoon Island (DEM)
Located just off Hough's Neck in Quincy, Raccoon Island is three acres of bedrock outcropping with one section rising about 30 feet above the harbor. Little human activity has been recorded on the island, although a religious order did operate a summer camp for boys there in the 1930s. Mudflats, gravel beaches, and rocky slopes provide a variety of habitats for wildlife. No public facilities exist on the island.

Ragged Island (Town of Hingham)
One of the Hingham Harbor Islands, the four-acre Ragged Island is supposed to have been named in the 17th century by John Langlee for his daughter Sarah's style of dressing, and it was the island he chose for his family to live on. It is the only Hingham Harbor island that has ever been inhabited. Ragged Island was once connected to the mainland by a footbridge, and, in 1880, a restaurant and observation post were built here. They are no longer standing. Like nearby Langlee Island, Ragged Island is popular for picnicking.

Rainsford Island (City of Boston)
Owned by the City of Boston, Rainsford Island is 11 acres composed of a large east head and small west head connected by a sand spit. It was named for one of the earliest recorded settlers, Edward Rainsford, who had a farm there as early as 1636. In 1737, a facility to quarantine persons with smallpox and other infectious diseases was moved there from Spectacle Island, and hundreds of victims are thought to be buried in the island's cemetery. The quarantine facility operated as needed until 1852, and when no communicable disease afflicted Boston and its environs an inn was permitted to operate on Rainsford.

In 1852, the Commonwealth purchased the quarantine hospital with an eye toward creating an almshouse; then, in 1866, the City of Boston bought the facility and converted it into a municipal poorhouse. After the Civil War, a number of veterans lived on the island until their transfer to the Soldiers' Home in Chelsea in the 1880s. The island then became a home first for female paupers and then for delinquent boys. This last incarnation, the Suffolk School for Boys, was closed in the 1920s and its students transferred to reformatories in Shirley, Westborough, and other towns.

Rainsford Island today is largely open field with a small stand of hardwoods on its east head (a drumlin) and slate outcroppings, relatively rare on the harbor islands, on the west head. There are ruins of its many institutions and

perhaps also of a fishing village that existed for a time on the island. It offers two curving fine-gravel beaches, but the constant pounding of ocean and northeastern winter storms has created a major erosion control problem. It is accessible to private boats. No water is available, and all trash must be carried off the island.

Sarah Island (Town of Hingham)
John Langlee is said to have been named this two-acre island for his daughter. Langlee purchased several of the Hingham Harbor islands in 1686.

Shag Rocks
This cluster of bedrock ledges among the Brewsters was hazardous to mariners. Today it contains bird nesting areas.

Sheep Island (DEM)
Sheep Island is said once to have embraced more than 25 acres. As its name suggests, early settlers used the island as sheep pasture, and in the 19th century it was popular with campers and duck hunters. Only a few feet above sea level, the island has been worn away to less than two acres by wind and water since settlement times. Located between Peddock's on the north and Grape Island on the south, the island is so small that recreational uses of it are discouraged.

Slate Island (DEM)
As its name indicates, this 12-acre island is basically a series of slate ledges. Beginning in the 1650s, the northwest side of the island was quarried for slate for the foundations of houses. Some sources state that the only 19th-century resident of the island was a hermit, but in the late 1930s a summer camp for boys was located here.

Slate Island is owned by the state and managed by DEM. Accessible only by private craft, the island has dense thickets of raspberry and barberry bushes and poison ivy. Walking trails allow visitors to see the remains of the 17th-century quarries.

Snake Island (Town of Winthrop)
Named for its serpentine shape, this two-acre island lies off Winthrop just east of Logan Airport. The island is mostly noteworthy for having escaped the fate of two other islands—Apple and Governor's—whose mudflats were incorporated into the Logan Airport runway system during in the 1950s. The island was first shown on a mariners' chart in the 1690s as Bare Island.

Spectacle Island (DEM and City of Boston)
Just west of Long and southeast of Castle Island, Spectacle Island got its name because its two drumlins, East and West Spectacle, are connected by a sandbar; at low tide, the island resembled a pair of eyeglasses. The 97-acre island was privately owned and used for agriculture in the 1660s, but in 1717 it became the site of a quarantine hospital for victims of infectious disease. Twenty years later the hospital was moved to Rainsford Island, and Spectacle became a summer resort with two hotels (and illegal gambling) in the 19th century. After 1857, this island was also the site of a factory that rendered dead horses for horsehair, hides, glue stock, bones, and neatsfoot oil.

The island's fortunes took another odd turn in the 1950s, when the City of Boston purchased it and began to fill its sandbar with municipal trash. The fill reached a depth of 70 feet before the dump was abandoned in 1959, and it gave the island its saddle shape. Discussion of possible future uses of the island was for a time tabled because of the need to stabilize the landfill and the island's seriously eroded eastern cliffs. With the announcement of plans to build a third tunnel under Boston Harbor to Logan International Airport and to depress the city's Central Artery, Spectacle was designated to receive fill from harbor dredges. The island's basic shape has once again been modified by the closing and capping of a former landfill and the creation of the highest peak in Boston Harbor. The island will feature a visitor center, marina, two sandy beaches, five miles of pathways, and 360-degree views of the city and the harbor (See Appendix 11.). The island is planned to be open to the public in 2002. It is now jointly owned by the city of Boston and the state, managed by DEM.

Thompson Island (Thompson Island Outward Bound Education Center)
One of two privately owned islands in the group (World's End is the other), Thompson Island is the site of the earliest documented European use of these islands. French traders had used the island, and in 1626 David Thompson built a post there to trade with the Neponset Indians. In 1833, the Boston Asylum for Boys was moved to the island, and in 1835 the asylum merged with the Boston Farm School Society to become the Boston Farm and Trade School. The vocational and farming emphasis of the school survived until the middle of this century, when a new academic curriculum stimulated another change of name to Thompson Academy.

At 157 acres one of the larger harbor islands, Thompson has a drumlin and a moraine; oak, linden, tamarack, maple, sumac, and birch trees; open fields with a variety of wildflowers and berry bushes; a pond; and 50 acres of saltwater marshes. A number of songbirds and shorebirds nest or roost on the island.

Today, owned and operated by Thompson Island Outward Bound Education Center, Thompson Island fulfills a vital educational role for children and adults from Boston and the surrounding metropolitan area. It is

the site of an Outward Bound program for inner-city youth that strives to bring together students of varying race, ethnicity, and class in an ambitious outdoor learning program. An estimated 32,000 people visit Thompson Island each year. The campus includes a residence hall housing 150 persons, an auditorium, a gymnasium, dining and conference areas, environmental study areas, a challenge adventure course, and trails. Thompson Island has a beach of more than 300,000 square feet, public bathrooms, boat and fishing piers, and a visitor information and education center; it is accessible by its own boat service.

World's End (The Trustees of Reservations)
Probably an island until recent times, World's End is a peninsula of some 248 acres and shares many of the features found on the harbor islands. Overlooking Hingham Bay, it is formed by two drumlins and has rocky beaches, ledges, cliffs, patches of salt marsh, and an area of freshwater marsh. Native Americans are thought to have camped on its two hills in the summer, and Europeans farmed the area from settlement times into the late 1800s. In 1890, John Brewer hired landscape architect Frederick Law Olmsted to draw up a park plan for his farm estate on World's End. Although the farm no longer exists, The Trustees of Reservations protects the land, and many of the original features of Olmsted's plan for the grounds, including gravel paths, formal tree plantings, and hedgerows bordering old farm fields, remain.

World's End offers trails for nature study (quail, pheasant, fox, rabbit, and migratory shorebirds thrive in its habitats), scenery, cross-country skiing, snowshoeing, fishing, and, by permit, horseback riding. A limited amount of parking is available, and an entrance fee is charged.

APPENDIX 4: SUMMARY OF PUBLIC INVOLVEMENT

From January through March 1998, the Partnership sponsored a series of seven public workshops throughout the region. They were attended by more than 400 people. The following summarizes the public comments recorded at these workshops.

ACCESS

Meeting participants called for easy, increased, affordable access to the Boston Harbor Islands. Participants envisioned a multi-modal transportation network—including mass transit, greenways, bikeways, ferries, water shuttles, and water taxis—connecting the region via various mainland access points dispersed around the harbor rim. They called for new and improved docks, public boat ramps, moorings, and handicapped-accessible piers to accommodate both a public water transit system, and increased use by private boaters. The public water transit system would provide frequent mainland and inter-island service to the larger, more environmentally stable islands while less frequent water shuttle service, kayaks, sailboats, wind surfers, and other pleasure craft could have access to the smaller, more environmentally sensitive islands. Participants specifically mentioned increasing public access to Long, Bumpkin, Peddock's, Great Brewster, Calf, and Moon islands.

DEVELOPMENT

"Modest is best," was the message that meeting participants sent to the planning team regarding development. Participants requested that the park partnership respect the scale of the islands when planning for new development, ensuring that any new construction fit well into the fragile island environment. While some participants felt that the partnership should allow no commercial development whatsoever, others explained that the partnership had to pursue some type of economic generators to support desired programs and services. Suggestions for development focused mainly on three islands: Long Island (a hotel, youth hostel, or restaurant), Spectacle Island (amphitheater, marina, or restaurant), and Peddock's Island (educational institution). Participants felt that the other islands should be kept as "natural" as possible, but with a few added perks, like: clean restrooms or outhouses; potable water; changing rooms; piers; "limited" overnight accommodations; food concessions (along with a non-franchise coffee shop); a bait shop; and a monument to the islands' initial occupants. To help keep on-island development to a minimum, participants suggested that the partnership consider harbor-side sites for facilities to support public use of the islands. Participants also pointed out the logic of using renewables—wind, sun, and the tides—as sources of energy for the islands.

CULTURAL RESOURCES

Meeting participants felt that the partnership should manage the Boston Harbor Islands in ways that are reflective of the islands' history, and respectful of their initial occupants. Participants suggested that the lighthouses and other historic structures be stabilized and preserved, and that Fort Warren be fully restored to help tell the story of how the fort functioned historically. People recommended that the partnership build on the current preservation efforts of the Metropolitan District Commission and the Department of Environmental Management, and work with Boston historical societies and historians in planning for the islands.

NATURAL RESOURCES

A majority of meeting participants expressed a strong desire to preserve the natural aspects of the islands. Recognizing that some development would take place on certain islands, many participants suggested preserving the undeveloped islands in as natural a condition as possible. Others said that not all the islands need to be open to human activity and that some should be reserved for wildlife. Some comments focused on the need to designate bird sanctuaries to protect nesting sites. Participants also emphasized the protection of the islands' botanic resources and even suggested reestablishing vegetation that was present prior to European settlement. A number of people called for the continued protection of the waters and beaches of Boston Harbor, pointing out that motor boat traffic and pollution would increase with greater visitation.

USES

Many participants want to see the traditional recreational activities maintained and enhanced where possible. The most commonly identified activities included swimming, fishing, boating, kayaking, canoeing, camping, hiking/walking, and picnicking. Opinions both for and against hunting were expressed. The general perception is that the Boston Harbor Islands should provide a wide range and variety of resource-dependent recreational activities. Commercial activities should be avoided because of their inherent conflict with the natural setting. The islands should provide the public with recreational opportunities that suit all levels of income and sophistication. The programs should have an educational value, as well. Recreational opportunities should be

expanded seasonally to provide wintertime activities, such as cross-country skiing. Many participants suggested that the islands have overnight accommodations, with examples ranging from primitive campgrounds to cottages, bed-and-breakfasts, rustic inns, but not commercial hotel chains. The public identified Long Island, Peddock's, and Spectacle islands as potential locations for overnight use. Other participants suggested having summer camps for children and retreats for adults. The islands could also be used for special events such as sports competitions and concerts. Indians could use the islands to practice tribal ceremonies, and market crafts, and create an "Indian Cultural Center."

EXPERIENCES

Participants spoke of the many ways they value the islands. Visitors go to them for a sense of isolation and quiet, an opportunity for contemplation, for the feeling of discovery and adventure; they appreciate the individual character of each island, and enjoy the transitional zone the islands provide between the urban built environment and a more rugged natural world. Visitors also regard getting to the islands by boat as part of the experience they value. Most commenters would like to see the islands kept without too many intrusive "urban" elements such as commercial signs, amplified noise, and flush toilets. Some people appreciated that the islands were safe for children. One commenter spoke of the value to city children of being able to see the night sky.

EDUCATION, INTERPRETATION, PROGRAMS

Commenters placed strong emphasis on using islands as outdoor classrooms in which a range of topics and themes could be explored, such as natural and cultural history, geology, archeology, ethnology, American Indian culture, marine biology, maritime safety and protection, history of land use, energy sources (wind, solar, tidal), and the impacts of humans on the islands. Several people discussed the opportunity for teaching and employing the arts in island programming. Others talked about tapping the academic community and of research opportunities that could also be part of education programs; for example, the rise of sea level could be studied in connection with global warming. Themes of conservation and stewardship were highlighted, with suggestions about using these concepts in island management. The audiences for education programs could range from youth to elderly and include particular audiences such as disabled people, tourists, volunteers, and retired people. Some of the ways to carry out education and programming could be through: an education center; signs, displays and guidebooks; calendar of activities; rangers and guides leading programs; nature walks; school field trips; after-school programs in the spring; job training and volunteer programs; "learning-by-doing"; and development of an Indian center at which people would learn firsthand about the Indian culture that used to predominate on the islands.

MARKETING

Of the few comments made about marketing, the main point was that the islands need to be better known or "advertised," both how to get to them and what visitors can do when they get there. Commenters noted that North Shore residents, especially, received little information about ferries from Lynn, and that advertising should also go to areas beyond the inner belt around Boston. Other groups that should be reached were Native Americans and visitors from around the country.

MANAGEMENT

The meeting participants identified a number of management issue themes. The emphasis of the comments focused on the proper and cooperative management of the islands to balance natural resource preservation and development while offering expanded services to the public. The islands should have community-based involvement in developing, managing, and marketing the islands. The public is concerned about the effectiveness of multi-agency management and suggests the cooperative and efficient use of agency resources. One participant described the national park area as a family of islands with individual personalities that should be taken into account when planning. Management decisions should be based on scientific data, such as natural resource inventories and carrying capacity studies. Participants recommended establishing strong ties between islands and mainland waterfront, and maximizing appropriate islands' natural and educational values, rather than developing the islands. The public stressed the overwhelming need for sufficient staffing for interpretation, protection, and maintenance. Many people suggested using volunteers and other creative alternatives to providing services without paid employees. The public would like to see more rangers and consistent visitor information with clear rules for public access and behavior. The participants are concerned about the potential for user conflicts, especially motorized versus non-motorized boaters. Another concern included increased trash problems, which the participants believed should be addressed by having more trash receptacles and "pack-it-in, pack-it-out" protocol where appropriate. The public would like to see the issue of the cottages on Peddock's Island resolved with their possible re-use for

public purposes. In general, the participants said they would like to have increased food, ferry, and program services throughout more of the year. Many people agreed that development connected with these services should be concentrated on only one or two of the islands, such as Spectacle and George's.

FINANCING

There was general recognition that a revenue stream will be needed in addition to public funding, especially because people seem to want, and assume there will be, more programs, better access, and heightened resource protection in the future. Beyond this commonality there was much divergent opinion about the proportion of public and private funding the degree of corporate sponsorship, and whether the main responsibility for funding should continue to be public funding, or whether strong efforts should go into seeking private funds. What is the degree of public commitment?, several people asked. A number of people suggested the need for guidelines for any private financing—such as prohibiting gambling, defining a desirable balance between having corporate funding and having too much commercialism, isolating commercial activity in certain areas to keep other areas "pristine." Several methods of fund-raising were suggested, with various degrees of public and private sponsorship: user fees; concessions for boat moorings; a conference center, restaurants, and events; "adopt an island"; a tax check-off; license plates; bond issues; public interest fund-raisers to create an endowment fund. And, opportunities for funding exist not only on the islands but along the shore, it was pointed out.

APPENDIX 5: IMPLEMENTATION COSTS

The draft general management plan provides general policy direction. At this conceptual level of planning, attendant costs are approximate. The following implementation cost estimates are helpful in long-range planning, but will not be used for short-term budgeting purposes. These costs are only a general indication or characterization of potential capital and operating implementation costs.

All Partnership members, except the Advisory Council, would provide the funds to implement the general management plan. Federal funding would be matched in the ratio of one-to-three, federal-to-nonfederal dollars. Successful implementation of the plan is contingent upon increasing the financial contributions from private sources, raised primarily by the Island Alliance. Private funding would be expected to come from philanthropic and park-related revenues, use fees, and income from commercial operations. Public agencies would be expected to fund large infrastructure projects throughout the system.

The estimated cost for operating the park is $8 million under any of the action alternatives. The differences between alternatives would be in the allocation of funds: under Alternatives A and C more funds would go to resource protection and fewer to education and interpretation than in Alternative B.

PLANS AND STUDIES

Managers require a basic level of knowledge about park resources and visitors, and fundamental plans must be developed to guide specific undertakings. Costs for plans and studies would be approximately $4 million for any of the three alternatives, A, B, or C during implementation of the general management plan.

		TOTAL COST
NATURAL RESOURCE BASELINE		**1,107,400**
Natural Resource Inventory	1,052,400	
Vital Signs Study	55,000	
VISITOR USE		**260,000**
Management Area Carrying Capacity (VERP)	240,000	
Visitor Profiles	20,000	
CULTURAL RESOURCE BASELINE		**1,455,000**
Archeology Overview and Assessment	175,000	
Cultural Landscape Report	180,000	
Ethnographic Overview and Assessment	260,000	
Historic Resource Study	300,000	
Historic Structures Reports and Preservation Guides	280,000	
Landuse Study	75,000	
List of Classified Structures	90,000	
Park History	45,000	
Scope of Collections	50,000	

Plans and Studies chart continued on next page

continued

		TOTAL COST
IMPLEMENTATION PLANS		**1,235,000**
Archeological Resources Management Plan	60,000	
Collections Management Plan	40,000	
Commercial Service Plan	75,000	
Comprehensive Identity and Signage Plan	60,000	
Comprehensive Interpretive Plan	20,000	
Economic Plan	200,000	
Fire Management Plan	15,000	
Hazardous Materials Survey	65,000	
Integrated Pest Management Plan	12,000	
Invasive Plants Management Plan	15,000	
Land and Water Transportation Plan	250,000	
Land Protection Plan	8,000	
Public Safety Plan	10,000	
Resource Management Plan	25,000	
Shoreline and Seawall Management Plan	45,000	
Trail Management Plan	15,000	
Vegetation Restoration Plan	15,000	
Visitor Use Management Plan	45,000	
Visitor Carrying Capacity Guidelines (VERP)	250,000	
Wetland and Floodplain Protection Plan	10,000	
TOTAL PLANS AND STUDIES		**4,057,400**

ANNUAL OPERATIONS

Anticipated operating expenditures would vary for the alternatives, within annual expenditures of approximately $8 million. The differences would be in staffing costs that reflect the emphasis of Alternatives A and C on resource protection and the emphasis of Alternative B on dispersed recreational activities. Current annual operating expenses for the park are approximately $4 million.

It is anticipated that a special initiative will be conducted in collaboration with the private sector for developing infrastructure at Fort Andrews on Peddock's Island. The above operating cost estimates do not include costs associated with these special facilities; the facilities would be operated in collaboration with the private sector on a self-sustaining basis.

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
STAFFING			
Management	760,000	760,000	760,000
Planning	315,000	315,000	315,000
Resource Protection	1,520,000	885,000	1,520,000
Administration	630,000	630,000	630,000
Education & Interpretation	885,000	1,520,000	885,000
Maintenance	1,100,000	1,100,000	1,100,000
SUBTOTAL	**5,210,000**	**5,210,000**	**5,210,000**
OPERATIONS			
Vehicles/boats (includes depreciation)	1,500,000	1,500,000	1,500,000
General Maint. Equip	700,000	700,000	700,000
Equipment & Supplies	400,000	400,000	400,000
Office & Facilities Leases	500,000	500,000	500,000
SUBTOTAL	**3,100,000**	**3,100,000**	**3,100,000**
TOTAL STAFFING & OPERATIONS	**8,310,000**	**8,310,000**	**8,310,000**

INFRASTRUCTURE DEVELOPMENT

The alternatives outline broad conceptual-level changes that potentially could occur in infrastructure development over the next 15 to 20 years. The anticipated costs for Alternatives A, B, and C are shown below. They are presented separately for mainland gateways, on-island infrastructure, and for a special initiative to be conducted in collaboration with the private sector for developing infrastructure at Fort Andrews on Peddock's Island.

In general, the National Park Service Class "C" cost estimating guide was used. A 20% adjustment was added to the estimates in the Class "C" guide for the cost of doing business on Boston Harbor. Some costs are based on relevant local experience. For instance, the Metropolitan District Commission (MDC) dock at Peddock's Island, which was completed in 1999, was the basis for ferry pier estimates. The cost estimates for each alternative show gross construction costs; pre-design and supplemental services; and design costs in year 2000 dollars. Pre-design costs and services include site-specific studies and assessments that must be completed before design of the project can move forward (e.g. archeological investigations, historic resource studies, natural resource surveys).

MAINLAND GATEWAYS

The draft general management plan identifies several locations for potential mainland gateways. The following costs were calculated for the Partnership members' role in developing a typical gateway.

- entrance and orientation sign
- site furnishings
- shade shelter
- retail space
- highway sign package
- visitor contact station/kiosk
- wayside exhibits

All other infrastructure costs (piers, parking, food service, restrooms, utilities, etc.) would be provided by cooperators, not the Partnership. Development of infrastructure at gateways depends on visitor demand and on cooperators. The estimated Partnership cost for a typical gateway endorsed as an official departure point for the islands is $1.2 million.

	Gross Construction	Predesign & Supplemental Services	Design	ANTICIPATED COSTS
visitor kiosk	87,910	5,215	7,450	100,575
concession/retail/tickets	828,360	49,140	70,200	947,700
site furnishings	11,800	700	1,000	13,500
shade shelter	17,700	1,050	1,500	20,250
highway signs	84,960	5,040	7,200	97,200
entrance sign	23,600	1,400	2,000	27,000
informational signs	2,360	140	200	2,700
interpretive waysides	25,488	1,512	2,160	29,160
TOTAL MAINLAND GATEWAY	**1,082,178**	**64,197**	**91,710**	**1,238,085**

ISLAND INFRASTRUCTURE

In order to maintain consistent treatment of the islands when identifying anticipated costs, it was assumed that all infrastructure and facilities "allowed" within each geographic management area would be developed on each island. While this will not happen, the assumption provides a rational approach to cost estimation for a general plan that does not specify site development. No capital costs were calculated in the Special Use management area. The island location for an Indian cultural center is not known, so a generic cost estimate is included in each alternative.

ALTERNATIVE A

It is estimated that upwards of $61 million would be needed to implement Alternative A on the islands, and gateway development could range from $4 million to $20 million, depending on how many mainland locations were developed over time. A special initiative to be conducted in collaboration with the private sector for developing infrastructure at Fort Andrews on Peddock's Island could cost upwards to $16 million.

ALTERNATIVE A	Gross Construction	Predesign & Supplemental Services	Design	ANTICIPATED COSTS
education centers & visitor kiosks (new construction)	1,579,548	93,702	133,860	1,807,110
treatment of historic structures (including adaptive reuse)	18,855,227	1,118,530	1,597,901	21,571,658
treatment of archeological sites (stabilization)	1,534,000	91,000	130,000	1,755,000
retail, ticket booths, etc. (new construction)	207,090	12,285	17,550	236,925
staff & maintenance facilities (new construction)	344,560	20,440	29,200	394,200
restrooms & composting toilets	752,486	44,639	63,770	860,895
shade shelters	70,800	4,200	6,000	81,000
floating ecological camp units	297,360	17,640	25,200	340,200
utilities	3,781,900	224,350	320,500	4,326,750
landscaping & site work	3,753,978	222,694	318,134	4,294,806
site furnishings	153,400	9,100	13,000	175,500
treatment of historic landscapes	1,770,000	105,000	150,000	2,025,000
trails	1,382,488	82,012	117,160	1,581,660
beach rehabilitation	236,000	14,000	20,000	270,000
wetlands & native plants revegetation	2,231,552	132,380	189,115	2,553,047
outdoor amphitheaters	-	-	-	-
campsites & showers	148,443	8,806	12,580	169,829
piers & floats	9,475,400	562,100	803,000	10,840,500
moorings	-	-	-	-
marina slips	-	-	-	-
marine-related handicapped improvements	1,274,400	75,600	108,000	1,458,000
signs & wayside exhibits	717,440	42,560	60,800	820,800
exhibits	1,180,000	70,000	100,000	1,350,000
environmental cleanup (USTs & asbestos)	3,305,180	196,070	280,100	3,781,350
TOTAL INFRASTRUCTURE : A	**53,051,252**	**3,147,108**	**4,495,869**	**60,694,229**

PEDDOCK'S ISLAND: ALTERNATIVE A	Gross Construction	Predesign & Supplemental Services	Design	ANTICIPATED COSTS
treatment of historic structures (including adaptive reuse)	4,993,524	296,226	423,180	5,712,930
building removal	1,878,560	111,440	159,200	2,149,200
restrooms & composting toilets	113,280	6,720	9,600	129,600
shade shelters	17,700	1,050	1,500	20,250
utilities	1,554,650	92,225	131,750	1,778,625
landscaping & site work	1,675,541	99,397	141,995	1,916,933
site furnishings	23,600	1,400	2,000	27,000
treatment of historic landscapes	708,000	42,000	60,000	810,000
trails	1,086,638	64,462	92,088	1,243,188
beach rehabilitation	-	-	-	-
wetlands & native plant revegetation	1,225,666	72,709	103,870	1,402,245
outdoor amphitheaters	-	-	-	-
campsites & showers	260,426	15,449	22,070	297,945
moorings	118,000	7,000	10,000	135,000
signs & wayside exhibits	81,656	4,844	6,920	93,420
exhibits	590,000	35,000	50,000	675,000
PEDDOCK'S INFRASTRUCTURE: A	**14,327,241**	**849,921**	**1,214,173**	**16,391,336**

ALTERNATIVE B

It is estimated that upwards of $88 million would be needed to implement Alternative B on the islands, and gateway development could range from $4 million to $20 million, depending on how many mainland locations are developed over time. A special initiative to be conducted in collaboration with the private sector for developing infrastructure at Fort Andrews on Peddock's Island could cost upwards to $57 million.

ALTERNATIVE B	Gross Construction	Predesign & Supplemental Services	Design	ANTICIPATED COSTS
education centers & visitor kiosks (new construction)	5,923,541	351,397	501,995	6,776,933
treatment of historic structures (including adaptive reuse)	19,130,757	1,134,875	1,621,251	21,886,883
treatment of archeological sites (stabilization)	1,534,000	91,000	130,000	1,755,000
retail, ticket booths, etc. (new construction)	5,591,430	331,695	473,850	6,396,975
staff & maintenance facilities (new construction)	2,691,580	159,670	228,100	3,079,350
restrooms & composting toilets	780,806	46,319	66,170	893,295
shade shelters	106,200	6,300	9,000	121,500
floating ecological camp units	297,360	17,640	25,200	340,200
utilities	1,602,440	95,060	135,800	1,833,300
landscaping & site work	6,650,834	394,541	563,630	7,609,005
site furnishings	224,200	13,300	19,000	256,500
treatment of historic landscapes	1,770,000	105,000	150,000	2,025,000
trails	2,390,680	141,820	202,600	2,735,100
beach rehabilitation	472,000	28,000	40,000	540,000
wetlands & native plants revegetation	2,660,535	157,828	225,469	3,043,833
outdoor amphitheaters	669,131	39,694	56,706	765,531
campsites & showers	223,068	13,233	18,904	255,205
piers & floats	14,785,400	877,100	1,253,000	16,915,500
marina slips	708,000	42,000	60,000	810,000
marine-related handicapped improvements	2,218,400	131,600	188,000	2,538,000
moorings	47,200	2,800	4,000	54,000
fishing pier	590,000	35,000	50,000	675,000
signs & waysides	885,826	52,549	75,070	1,013,445
exhibits	1,622,500	96,250	137,500	1,856,250
environmental cleanup (USTs & asbestos)	3,305,180	196,070	280,100	3,781,350
TOTAL INFRASTRUCTURE: B	**70,957,528**	**4,209,345**	**6,013,350**	**87,957,155**

PEDDOCK'S ISLAND: ALTERNATIVE B	Gross Construction	Predesign & Supplemental Services	Design	ANTICIPATED COSTS
treatment of historic structures (including adaptive reuse)	31,321,442	1,858,052	2,654,360	35,833,853
building removal	1,878,560	111,440	159,200	2,149,200
restrooms & composting toilets	349,280	20,720	29,600	399,600
shade shelters	35,400	2,100	3,000	40,500
utilities	3,000,463	177,994	254,277	3,432,733
landscaping & site work	8,319,471	493,528	705,040	9,518,038
site furnishings	23,600	1,400	2,000	27,000
treatment of historic landscapes	708,000	42,000	60,000	810,000
trails	1,086,638	64,462	92,088	1,243,188
beach rehabilitation	236,000	14,000	20,000	270,000
wetlands & native plant revegetation	1,225,666	72,709	103,870	1,402,245
outdoor amphitheaters	154,415	9,160	13,086	176,661
campsites & showers	272,226	16,149	23,070	311,445
moorings	118,000	7,000	10,000	135,000
signs & wayside exhibits	81,656	4,844	6,920	93,420
exhibits	590,000	35,000	50,000	675,00
PEDDOCK'S INFRASTRUCTURE: B	**49,400,817**	**2,930,557**	**4,186,510**	**56,517,883**

ALTERNATIVE C

It is estimated that upwards of $79 million would be needed to implement Alternative C on the islands, and gateway development could range from $4 million to $20 million, depending on how many mainland locations are developed over time. A special initiative to be conducted in collaboration with the private sector for developing infrastructure at Fort Andrews on Peddock's Island could cost upwards to $56 million.

ALTERNATIVE C	Gross Construction	Predesign & Supplemental Services	Design	ANTICIPATED COSTS
education centers & visitor kiosks (new construction)	4,240,448	251,552	359,360	4,851,360
treatment of historic structures (including adaptive reuse)	18,501,227	1,097,530	1,567,901	21,166,658
treatment of archeological sites (stabilization)	1,534,000	91,000	130,000	1,755,000
retail, ticket booths, etc. (new construction)	2,692,170	159,705	228,150	3,080,025
staff & maintenance facilities (new construction)	1,694,480	100,520	143,600	1,938,600
restrooms & composting toilets	516,486	30,639	43,770	590,895
shade shelters	123,900	7,350	10,500	141,750
floating ecological camp units	297,360	17,640	25,200	340,200
utilities	4,794,340	284,410	406,300	5,485,050
landscaping & site work	5,239,303	310,806	444,009	5,994,118
site furnishings	212,400	12,600	18,000	243,000
treatment of historic landscapes	1,770,000	105,000	150,000	2,025,000
trails	1,559,488	92,512	132,160	1,784,160
beach rehabilitation	472,000	28,000	40,000	540,000
wetlands & native plant revegetation	2,488,942	147,649	210,927	2,847,519
outdoor amphitheaters	514,716	30,534	43,620	588,870
campsites & showers	183,843	10,906	15,580	210,329
piers & floats	13,605,400	807,100	1,153,000	15,565,500
moorings	47,200	2,800	4,000	54,000
marina slips	708,000	42,000	60,000	810,000
marine-related handicapped improvements	2,218,400	131,600	188,000	2,538,000
signs & wayside exhibits	854,320	50,680	72,400	977,400
exhibits	1,622,500	96,250	137,500	1,856,250
environmental cleanup (USTs & asbestos)	3,305,180	196,070	280,100	3,781,350
TOTAL INFRASTRUCTURE: C	**69,196,103**	**4,104,854**	**5,864,077**	**79,165,033**

PEDDOCK'S ISLAND: ALTERNATIVE C	Gross Construction	Predesign & Supplemental Services	Design	ANTICIPATED COSTS
treatment of historic structures (including adaptive reuse)	31,321,442	1,858,052	2,654,360	35,833,853
building removal	1,878,560	111,440	159,200	2,149,200
restrooms & composting toilets	113,280	6,720	9,600	129,600
shade shelters	35,400	2,100	3,000	40,500
utilities	3,000,463	177,994	254,277	3,432,733
landscaping & site work	8,260,471	490,028	700,040	9,450,538
site furnishings	23,600	1,400	2,000	27,000
treatment of historic landscapes	708,000	42,000	60,000	810,000
trails	1,086,638	64,462	92,088	1,243,188
beach rehabilitation	236,000	14,000	20,000	270,000
wetlands & native plant revegetation	1,225,666	72,709	103,870	1,402,245
outdoor amphitheaters	154,415	9,160	13,086	176,661
campsites & showers	272,226	16,149	23,070	311,445
moorings	118,000	7,000	10,000	135,000
signs & wayside exhibits	81,656	4,844	6,920	93,420
exhibits	590,000	35,000	50,000	675,000
PEDDOCK'S INFRASTRUCTURE: C	**49,105,817**	**2,913,057**	**4,161,510**	**56,180,383**

APPENDIX 6: IMPLEMENTATION PHASING

The draft management general plan has a 20-year planning horizon and presents a framework for park management. The planning horizon for the first phase of implementation is five years. This coincides with the time frame of the park strategic plan. The specifics of how the general plan will be accomplished will be contained in the park strategic plan (and accompanying annual performance plans) and in implementation plans. The strategic management plan is a tool to ensure that actions are guided by goal-setting and followed by performance measurement and evaluation.

The following initiatives would be carried out during Phase I (the first 5 years) of the proposal. The remainder of the actions needed to implement the general management plan would take place during Phase II (year 6 and beyond). Each initiative includes several long-term goals that help define the desired outcome. The long-term goals address the park mission and mission goals presented in the draft general management plan.

NOTE: Phase I implementation, with associated costs, will be inserted in the appendix once an alternative is selected and a proposal presented in the final general management plan.

APPENDIX 7: SUMMARY OF CULTURAL LANDSCAPE STUDY

The Olmsted Center for Landscape Preservation of the National Park Service conducted an overview of the cultural landscapes of the Boston Harbor Islands. A report of this study will be published in 2000 separately from the general management plan. The following summarizes the study's findings.

Although most were never permanently settled, nearly all of the Boston Harbor Islands contain significant cultural resources related to coastal defense, agriculture, commercial fishing, year-round and summer habitation, resort life, industry, public health, and social welfare. Textual documentation exists for Euro-American agricultural use of the islands from as early as 1634; archeological and anecdotal evidence indicate the existence of a pre-contact corn culture among the indigenous peoples on many of the islands. During the 17th, 18th, and early 19th centuries, the islands of the Inner Harbor, as well as those of Quincy and Hingham bays, served as pasturage for mainland cattle and sheep. Bumpkin, Rainsford, and Long islands contain some of the sites in the metropolitan area that suggest the Commonwealth's fleeting "plantation period." The agricultural tradition on the islands came to an end in the 1930s, when both the Thompson Academy on Thompson Island and the Brewer estate at World's End curtailed farming activities. Extant evidence of agricultural use on the islands is limited to scattered fruit trees, fragments and foundations of residential buildings and farm structures, wells, stone walls and dams, and shrub and herbaceous vegetation in formerly cleared areas. The foundation of the David Thompson's house, perhaps the first English building in Boston Harbor, was discovered on Thompson Island in 1889 and provides evidence of early agricultural activities, as well as trade links with Native American populations.

The islands' natural resources attracted a number of cultural communities, whose resource-based use and activities have left their imprint on the landscape. From prehistoric times, the Harbor Islands were important fishing and hunting outposts. Shell middens and other recovered faunal remains indicate multi-site seasonal settlement patterns on many of the islands, beginning as early as the Middle Archaic period. Occupation of the Harbor Islands seems to have intensified during the Woodland periods, and though contact with Europeans disrupted aboriginal lifeways, Native Americans continued seasonal occupation of the islands during the contact period, following available natural resources. Euro-Americans also used many of the islands as a base for harvesting marine resources. Archeological evidence locates 19th-century fishing settlements on Green, Calf, and Bumpkin islands. Residential communities established by Portuguese fishermen on Long, Rainsford, and Peddock's islands demand further investigation. In addition, the deforested landscapes and other environmental depredations on many of the islands bear witness to the legacy of Euro-American resource extraction, including timber harvesting throughout the harbor area and quarrying on Slate and Outer Brewster islands.

By far the most abundant evidence of human use of the islands relates to coastal protection and defense. As an early center of maritime commerce, Boston required protection from sea-borne foes. Beginning with Fort Independence on Castle Island, now an MDC property listed on the National Register of Historic Places and believed to be the oldest continuously occupied fortification in British North America, Boston Harbor boasted an important system of coastal defenses that at its peak included seven active forts. The partially restored Fort Warren, an impressive granite Third System fortification designated as a National Historic Landmark, has stood on George's Island as a major defensive post for the protection of the harbor in every conflict from the Civil War through World War II. Fort Andrews, erected on Peddock's Island in the first decade of this century, is a rare example of a relatively intact coastal fort of the Endicott Period (1888–1905); its 26 remaining buildings and structures, many constructed with red brick walls and slate roofs in a simple Colonial Revival style, are situated along a drumlin ridge that once commanded an expansive view of Boston Harbor. Artillery batteries, constructed during successive reinforcement campaigns throughout the nation's history, remain in varying states of obscurity and disrepair on many of the islands as evidence of a continuously evolving, integrated system of coastal defense. Sea walls constructed by the Army Corps of Engineers on many of the fortified islands, together with the Civil War cemetery on Long Island and several purported, yet unmarked burial sites, suggest military presence in the cultural landscapes of the Harbor Islands.

The importance of shipping to the Boston economy led to increased concern for harbor safety. Navigational aids constructed to guide ships through the often treacherous harbor channels and roads include Boston Light on Little Brewster Island, a National Historic Landmark which is purported to include portions of the oldest lighthouse structure in the United States; lighthouses on Long Island and The Graves; and the channel marker on Nix's Mate. There are no known remains of the huts of refuge constructed by the Massachusetts Humane Society to shelter shipwreck victims on the islands during the 19th century, although the Hull Lifesaving Museum preserves important artifacts

from the lifesaving activities of volunteer organizations of the harbor's coastal towns.

The most intensive human use of the islands has been to house facilities that have addressed serious issues of urban life. The influence of antebellum reform thought, which favored isolation as the solution for social and public health problems, made the islands a tempting location for facilities and institutions deemed unsightly and often read as evidence of threats to the social order. The earliest documented use of the islands as repositories for such problems was the internment of Christian Indians on Deer Island during King Philip's War, a conflict for which there is ample textual documentation, but no known physical evidence of camps or burials. War prisoners were confined at Fort Warren on George's Island during the Civil War and at Fort Andrews on Peddock's Island during World War II. Similar institutions, basically penal but ostensibly oriented toward reforming their inmates, existed on other islands. Rainsford Island contains the ruins of many 19th-century institutions, including a home for delinquent boys that operated there until the 1920s. The relocation of the Suffolk County House of Corrections in 1991 ended Deer Island's history as one of the oldest penal sites in continuous use in the United States and obscured the functional landscapes that demonstrated the institution's punitive and reformatory mission.

Victims of infectious disease, mental illness, and poverty were also thought to be pernicious social problems that could undermine the social order and were more easily managed in the isolated setting of the harbor islands. Among the ruins on Rainsford Island may be fragments of a neo-Classical building that served as a quarantine hospital during the early 19th century, as well as the unmarked graves of hundreds of victims of smallpox and other infectious diseases. A late-19th-century municipal almshouse, converted to both a home for unwed mothers and homeless men and a treatment center for substance abuse and mental illness during this century, served as a precursor to the Long Island Chronic Care Hospital. Though the City of Boston no longer offers medical services at the site, a range of social services agencies operating at the Long Island campus preserves evidence of the island's complex institutional past. The remains of an early-20th-century immigration station established by the U.S. Public Health Service on Gallop's Island serve as yet another reminder of the role the islands played in the history of Boston's burgeoning population. On Bumpkin Island, the foundations of the Burrage Hospital, a summer facility for paraplegic children that temporarily housed a naval installation during World War I, bears testimony to an incipient shift in the public perception of both the management of social concerns and the restorative potential on harbor island landscapes. This trend is best illustrated on Thompson Island, where an asylum for indigent boys in the 1830s gave way to an agricultural and vocational school later in the century before its evolution into the Thompson Island Outward Bound Education Center.

Positioned for recreational use by their proximity to a large urban population, the harbor islands intermittently have been a popular pleasure ground for Bostonians of all classes. Many islands were used for picnics, fishing, and bathing, as well as for illegal gambling and boxing matches during the summer months. Little remains of the summer hotels that once operated on Spectacle, Gallops, Peddock's, and Rainsford islands, but fragments of summer residences at World's End and on Calf, Long, and Middle Brewster islands bear witness to the once vibrant landscapes of these summer communities. Summer cottages on Peddock's Island are the last remaining residential structures on the Harbor Islands and allude to the former prevalence of summer communities and recreational activities in the harbor. While the islands were not viewed historically as a collective recreational asset, Frederick Law Olmsted's vision for the reforestation of the islands and protection of the harbor's green spaces was partly realized with the creation of the Boston Harbor Islands State Park nearly a century later in 1970.

Deer Island continues to serve in the islands' traditional roles as a repositories for municipal waste. Alongside the much-expanded and modernized MWRA wastewater treatment facility stands the pump house of a sewage station erected in 1889, recalling early attempts to deal concertedly and scientifically with the solid and liquid wastes that have been carried to Boston Harbor since 1878. The granite containers of a "state-of-the-art" sewage treatment plant built in 1873 remain on Moon Island, as does an outmoded sewage treatment plant constructed at the turn of the century on Nut Island.

In these respects, the Boston Harbor Islands collectively represent an unbroken historical thread in the story of maritime and urban development. The islands' cultural landscapes not only demonstrate patterns of land use that prevailed during different periods of the city's history, but document shifts in cultural values and in the fabric of collective identity, one often rent with discord but mended with informed and vigilant care.

APPENDIX 8: SUMMARY OF WATER TRANSPORTATION STUDY

National Park Service policy is to provide a variety of well-integrated transportation options in parks and to encourage public transportation wherever feasible. In general, transportation systems in units of the national park system will:

- provide for visitor use and enjoyment
- enhance the visitor experience by
  - offering new or improved interpretive opportunities
  - simplifying travel within the park, or
  - making it easier to see park features
- provide accessibility for disabled persons
- reduce traffic congestion, noise, air pollution, and adverse effects on park resources and values
- conserve energy
- consider cost

The Volpe National Transportation Systems Center (part of the U.S. Department of Transportation), and TAMS Consulting were hired to support the water transportation planning in collaboration with the Partnership and surrounding municipalities. The aim is to provide long-range guidance on service, vessel, and gateway requirements that will maximize the visitor experience, be environmentally responsible, and be economically viable for boat operators; and to recommend a system of water transportation services in the short term (2000–2005). A short-term water transportation plan was developed through a collaborative process of island owners and municipalities with input from local boat operators.

SUMMARY OF GUIDELINES FOR TRANSPORTATION

These guidelines are based on the following assumptions. First, ferry service will expand in phases over time. Visitor demand is expected to grow, with an increase in recreational opportunities, cultural and historical programs, and their attendant capital improvements and publicity. Ferry service will need to expand with that growth.

Ferry service will build on existing ferry networks. The primary service will continue to be direct access to the island hubs. It may supplemented by spine routes that primarily provide commuter service; these can provide additional service as visitation increases. As additional islands are opened for visitors, additional direct access service may be necessary. Inter-island service will continue to be provided by a water shuttle.

Additional gateways and routes will be added when there is demonstrated demand. The park would be expected to authorize routes that are economically sustainable overall. When visitor demand warrants, new ferry departure points and routes would be added.

Three possible options for managing the water transportation system have been identified. The options are: (1) a contract with a single provider who has exclusive landing rights; (2) route franchises; and (3) open competition among all boat operators for ferry and water shuttle business with an associated docking fee management program. Route franchises are contracts with a boat operator to depart from specific mainland gateways with specific stop(s) at one or more island hubs in exchange for exclusive rights to that particular route. The route franchise concept provides predictability of schedule and fares while increasing flexibility of service options.

Route franchise operators may be required to financially support the water shuttle routes. Water shuttle services are not economically viable on their own and thus may need to be subsidized by ferry operators through head fees on gateway services.

Docking rights will be limited by franchise conditions. Commercial operators other than the franchise holder may have limited access to particular docks.

Island docks, which are controlled by park managers, will not be open to commercial ferries without regulation. Visitors expect certain levels of service from park managers. Ferry service needs to be coordinated with the park so that sufficient staff will be on islands to provide visitor services and protect resources.

Ferry services will be financially self-sustaining. To the maximum degree possible, the ferry service will need to operate without federal, state, or local government subsidies.

Some state funding is available through the transportation bond bill and other sources for capital improvements (e.g., infrastructure or vessels) and demonstration projects, but not for ongoing operations subsidies.

Lastly, demonstration projects will be used to test routes, ferries, and ridership demand. Pilot projects can test the feasibility of routes and ridership demand as well as the feasibility of new types of ferries.

The recommended management option for the short-term Boston Harbor Islands ferry system (2000–2005) is for multiple operators to provide services for the proposed schedules for peak and shoulder season service, including (1) "gateway" services from various mainland locations to the islands, (2) a separate inter-island shuttle system, and (3) accommodation of independent charter operations. Gateway as well as island terminal facility management is required. Three sets of

mainland-to-island gateway services are recommended: (1) Central routes from downtown hub terminals to George's Island, (2) central routes to Spectacle Island, (3) additional services from South Shore and North Shore gateways may be proposed by operators. There will be no operating subsidies for these routes. All operators will need to conform to schedule, fare price, and operations requirements. A separate shuttle operation is included with two loops, north and south. Funding for the shuttles may come from head fees on gateway services and charter operations as well as corporate grants. As with current service, there will be no fare charge on the shuttle. Charter operations will be open to multiple qualifying operators.

APPENDIX 9:
VISITOR EXPERIENCE AND RESOURCE PROTECTION (CARRYING CAPACITY)

THE PROCESS

One of the requirements of a general management plan is the identification of and implementation of commitments for carrying capacity. To comply with this mandate, a process known as visitor experience and resource protection has been developed within the National Park Service. This process interprets carrying capacity not as a prescription of numbers of people but as a prescription of desired ecological and social conditions. Measures of the appropriate conditions replace the measurement of maximum sustainable use. Based on these conditions, the process identifies and documents the kinds and levels of use that are appropriate as well as where and when such uses should occur. The prescriptions, coupled with a monitoring program, are intended to give park managers the information and the rationale needed to make sound decisions about visitor use and to gain the public and agency support needed to implement those decisions.

A major premise of the visitor experience and resource protection process is that the characteristics of a management area, which are qualitative in nature, must be translated into something measurable to provide a basis for making wise decisions about appropriate visitor use. Since management actions are normally more defendable when they are based on scientific data, the process incorporates the concept of "limits of acceptable change" as part of the decision-making process. Desired resource or social conditions are expressed as explicit, measurable indicators, and standards (i.e., minimum acceptable conditions) are selected to determine whether the conditions are met or exceeded. Resource indicators are used to measure impacts on the biological or physical resources, while social indicators are used to measure impacts on park users that are caused by interactions with other users and park employees.

The first critical steps of the applying the visitor-experience-and-resource-protection process to the Boston Harbor Islands will be accomplished as part of the general management plan. These steps are :

1. Develop a mission statement which incorporates the park's purpose and significance.
2. Analyze park resources and existing visitor use.
3. Describe the range of resource conditions and visitor experiences for the park as distinct management areas.
4. Apply the management areas to specific locations of the park.

   Subsequent to the general management plan, the following steps will be taken to complete the process:

5. Select quality indicators and specifying associated standards for each management area. The purpose of this step is to identify measurable physical, social, or ecological variables that will indicate whether or not a desired condition is being met. Monitoring techniques for each management area are also selected and evaluated in this step.
6. Compare desired conditions to existing conditions. Each management area will be monitored to determine if there are discrepancies with the desired resource and social conditions.
7. Identify the probable causes of discrepancies in each management area.
8. Identify management strategies to address discrepancies. Visitor use management prescriptions will start with the least restrictive measures that will accomplish the objective and move toward more restrictive measures if needed.
9. Carry out long-term monitoring. Monitoring provides periodic, systematic feedback to park managers to ensure that desired resource and visitor experience conditions continue to be achieved over the long term.

Once the indicators and standards are established, park managers can develop a monitoring plan to determine priorities and identify methods, staffing, and analysis requirements. The results of the monitoring analysis will enable park managers to determine whether a park's resources are being adequately protected and desired visitor experiences are being provided, and to take management actions necessary to achieve the goals of the Boston Harbor Islands.

EXAMPLES OF INDICATORS AND STANDARDS

The Boston Harbor Islands national park area will begin an intensive inventory and monitoring program. It will include collecting existing and widely scattered data and instituting a parkwide process of scientific data gathering and evaluation that will further the application of monitoring for resource conditions and public experience within the park.

The following examples come from Arches National Park in Moab, Utah. The Boston Harbor Islands Partnership would develop its own resource indicators and standards. The selection of appropriate standards for the resource indicators in each management area will be based on the relative tolerance for resource impacts and

the judgment of park planners and resource managers about the minimum conditions needed to maintain the desired experience.

RESOURCE CONDITIONS

Indicator: the percentage of the soil surface at a campsite with bare ground
Standard: 60% of the soil surface at a campsite is bare ground

Indicator: the degree of soil compaction measured 5 feet from a trail centerline
Standard: 80% of the soil surface samples exhibit 50% of the porosity of a relatively undisturbed area

Indicator: the average soil crust index value for a 100-meter transect
Standard: the average soil crust index for a transect is 4

Indicator: the number of exposed tree roots exceeding 2 inches in diameter, measured within 6 feet of a trail edge for a hundred feet of trail
Standard: 20% of tree roots are exposed relative to a control area

SOCIAL CONDITIONS

Indicator: the percentage of parties that can camp out of the sight or sound of other parties in the backcountry
Standard: 70% of parties report that they could camp out of the sight and sound of other parties

Indicator: number of people seen at one time at Grand Arch over the course of a year
Standard: 90% of visitors over the course of a year see more no more than 30 people at one time

Indicator: the number of people encountered along a trail per day over the course of a year
Standard: 80% of visitors over the course of a year encounter no more than 10 people per day along the trail

Indicator: the traffic congestion during peak visitor use days
Standard: roadways do not exceed level D service for more than 10% of peak use days

Indicator: the waiting period required to see an attraction during peak use days
Standard: no more than 10% of visitors wait 10 or more minutes to see the attraction

APPENDIX 10: FUTURE PLANS AND STUDIES

The Boston Harbor Islands national park area needs extensive baseline data on the entire island system. Following is a list of plans and studies that will be undertaken. Costs for each plan or study will depend on the scope of the project, which in turn will be affected by available funding at the time the project is initiated.

NATURAL RESOURCE BASELINE
- Natural Resource Inventory
- Monitoring Vital Signs

VISITOR USE
- Management Area Carrying Capacity (VERP)
- Visitor Profiles

CULTURAL RESOURCE BASELINE
- Archeology Overview and Assessment
- Cultural Landscape Report
- Ethnographic Overview and Assessment
- Historic Resource Study
- Historic Structures Reports and Preservation Guides
- Land Use Study
- List of Classified Structures
- Park History
- Scope of Collections

STRATEGIC PLANS
- Five-year Strategic Plans
- Annual Performance Plans

IMPLEMENTATION PLANS
- Archeological Resources Management Plan
- Collections Management Plan
- Commercial Service Plan
- Comprehensive Identity and Signage Plan
- Comprehensive Interpretive Plan
- Economic Plan
- Fire Management Plan
- Hazardous Materials Survey
- Integrated Pest Management Plan
- Invasive Plants Management Plan
- Land and Water Transportation Plan
- Land Protection Plan
- Public Safety Plan
- Resource Management Plan
- Shoreline and Seawall Management Plan
- Trail Management Plan
- Vegetation Restoration Plan
- Visitor Use Management Plan
- Visitor Carrying Capacity Guideline (VERP)
- Wetland and Floodplain Protection Plan

APPENDIX 11: SPECTACLE ISLAND DEVELOPMENT

Spectacle Island, one of the largest and closest-in harbor islands, has a history of receiving society's detritus. At the approach of the 21st century, it is again a recipient of material from elsewhere, but this time it is undergoing renewal and development as a park built up into two new hills, like drumlins, with fill from Boston's highway and tunnel construction project. When completed, these hills will be the highest points in the harbor with 360-degree vistas.

The island managers, the City of Boston and the Massachusetts Department of Environmental Management, have worked with the Massachusetts Turnpike Authority's central artery and tunnel project and the Spectacle Island Park Advisory Committee to develop a plan for the island. They have also developed a partnership with the New England Aquarium, the construction company Modern Continental, and the University of Massachusetts Urban Harbors Institute to manage and develop programs for the island's operations once park development is complete.

The plan calls for one building structure of approximately 7,500 square feet to house a visitor information facility, a café, exhibits, a classroom, a souvenir shop, staff living areas, staff workspace, a first aid area, and a variety of maintenance, storage, and janitorial space.

The New England Aquarium will maintain exhibits, assist with visitor information and orientation, run school and youth programs, and have films and lectures. Throughout the island there will be land-and water-based recreational opportunities. These may include hiking, cross-country skiing, sea kayaking, scuba diving, birdwatching, picnicking, concerts, interpreted nature trails, and outdoor research-based exhibits such as experimental nature restoration projects.

The University of Massachusetts Urban Harbors Institute will provide expertise for research on sustainable usage, coastal zone management, marine transportation, and water quality analysis. Modern Continental Companies, Inc. will handle marina management and any future construction activities, as appropriate to expanding visitor needs.

The U.S. Department of Transportation has awarded a $500,000 grant to "make Spectacle Island a futuristic land of zero-emission power. It will be powered by solar energy collectors and offer visitors rides in electric cars and on an electric boat and electric bicycles, becoming a kind of demo for a post-fossil-fuel world, and a model for other national parks," to quote from *The New York Times*, June 29, 1999.

The park landscape will include five miles of pathways, two sandy beaches, artwork, and a variety of flora for erosion control and scenery. A pier and marina will be part of the development for both ferry vessels and private watercraft.

A goal of the programming and operations is to sustain the island by revenue-generating activities such as food service, marina services, docking fees, pier development, group sales, souvenir shop, tours, conferences, and special events. Integral is the idea of accomplishing the goals through the use of "green" technology wherever feasible. The island is expected to be open to the public in 2002.

APPENDIX 12: PEDDOCK'S ISLAND DEVELOPMENT

A Summary of *Peddock's Island Reuse Feasibility Study* by the New England Chapter of the Counselors of Real Estate, May 1999

On behalf of the Metropolitan District Commission (MDC) and the Island Alliance (IA), a group of highly experienced and knowledgeable real estate consultants undertook a year-long pro-bono investigation into the feasibility of developing Fort Andrews on Peddock's Island. The purpose was to determine basic feasibility of a range of uses and to provided a framework for evaluating future concepts of reuse for the 100-year old fort, while keeping other parts of the island undeveloped. The group explored the current conditions of the fort, examined previous proposals for its reuse, evaluated the potential market for new uses, and reviewed legal issues related to allowing private operations within public property.

Adaptive reuse of Fort Andrews could optimize the history, architecture, and layout of the fort, potentially creating a recreational village or conference center with ancillary facilities around an educational theme. It could provide an unusual setting close to the large metropolitan area of Boston in which to draw visitors for a range of island-related activities, including fishing, sailing, boating, sea kayaking, and hiking.

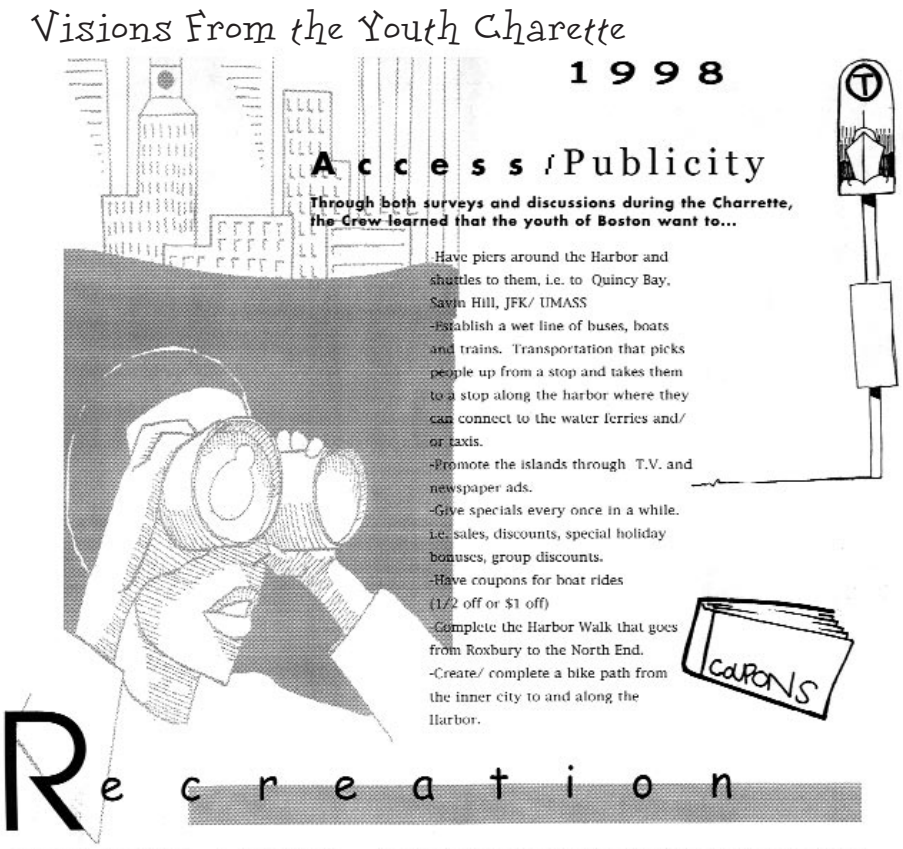
The Counselors concluded that Peddock's Island has potential for becoming a centerpiece of the Boston Harbor Islands national park area for year round use, but especially for three seasons of very active use. Possible uses for Fort Andrews might be for a conference center, bed and breakfast inns, a restaurant, an environmental education center, laboratories, research facility for an institution like the New England Aquarium, an American Indian center, a college facility for parks education, camping, a marina, or a children's camp for environmental education.

The Counselors reached several conclusions. Development of Fort Andrews could not be accomplished at once but would need to be phased over ten years or more, the group believes. Private sector operations for camping, marina, and concessions would be necessary to gain revenues for maintaining the island. However, a large investment in infrastructure by public agencies would be needed in order to be attractive to the private sector. Authority to issue long-term leases would also be essential for private-sector investors, and would need specific legislative authority, for which there are several recent examples in the state. Costs were itemized for the first phase (see Implementation Costs in Appendix 5). Revenues sources would be from fees for lodging, conferences, moorings, campsites, equipment rentals, The phases recommended are:

- the "beachhead," in first three years; concept plan refined, visitor facility developed, site cleanup and clearing around buildings, water and sanitary systems installed, rehabilitation of several historic structures, development of campsites, playfields, and moorings.
- the "expansion," years four through seven with rehabilitation of remaining buildings, full infrastructure expanded, "opportunity sites" readied for final development, marketing activities accelerated.
- the "realization" in years eight through ten with sites leased and developed and ten-year program completed.

APPENDIX 13: HARBOR VISIONS YOUTH CHARRETTE

The drawings in this appendix come from the *1998 Harbor Visions Newsletter*, a product of a youth corps called Harbor Visions Crew, which is jointly sponsored by the Massachusetts Water Resources Authority, Save the Harbor/Save the Bay, and Roxbury Multi-Service Center. The Harbor Visions Crew was created in 1994 and has participated in a variety of public information projects related to Boston Harbor and the Boston Harbor Islands including a "charrette" (a brainstorming session to produce designs and concepts for a place). At the 1998 charrette Harbor Visions Crew and invited guests focused on the future potential of the harbor and islands. Other projects have included water conservation, pollution, access to the harbor islands, environmental law, and environmental preservation.

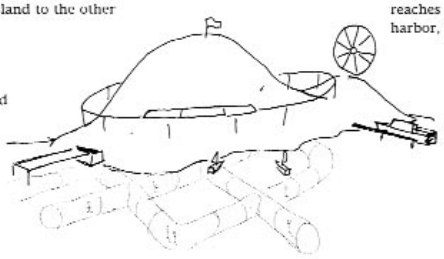


Spectacle Island. What do people want to see, how would they like to enjoy th new park, what would they like to do with it? Here are some of the ideas that the young people of the Yo Charrette came up with.

Monorail system: A cool transportation system that would encompass the island and move families to and from one side of the island to the other

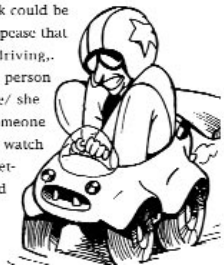
Giant Ferris Wheel on Spectacle Island Pier: Most a have an inner child in which needs to be dealt with in s way. A ferris wheel is a good solution. One, because parents and their children could ride and because mo not all people like to ride ferris wheels. Two; once the w reaches it's peak, people are able to see out over the c harbor, the islands and the Boston Skyline.

Jutting piers: Would allow small businesses and boaters to dock and have a good time.



See through Garage/ Tunnel: Would allow people to have contact with what's underneath the Harbor's waters..

Go-Kart Track: Many people love to drive no matter what age they are. A go- kart track could be opened to appease that hunger for driving,. So when one person goes, then he/ she will bring someone else along to watch them, thus getting the word out on the street about the island.



Visions From the Youth Charette

Restaurants:

Imagine eating on beautiful Spectacle or Long island and enjoying the sunset. The food is great. You're there with your family or loved one(s). The best thing about it is that the bill isn't going to rip a hole in your wallet (unless, of course, you order that blue lobster, clam and calamari dinner you've been salivating for). That would be quite nice, wouldn't it?

Did you know that...

-Now that the Boston Harbor is cleaner, Harbor seals and porpoises are returning in larger numbers.

-Now that the Harbor is cleaner, certain birds that once lived there have moved someplace else. A mollusk that formerly grew on the Harbor floor has left because the sludge and pollution that it ate is gone. So once the mollusks' food supply went, the mollusks themselves left and the birds that ate the mollusks left as well. Interesting.

-Several years back when the harbor was dirtier, there wasn't as much salt in the harbor. It was mainly pollution. But now with improved harbor quality the levels of salt have increased dramatically.

-The level of salt in water is known as the level of salinity.

-A mollusk is any shelled marine animal; such as snails, clams, crabs...

-The big egg digesters act like a big stomachs, only they're for the Harbor. There are little bacteria that break down the sludge so that it can pass through the rest of the process with ease.

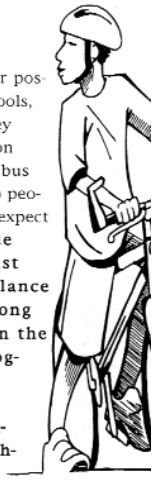
Preservation/ Education/ Geology/ History...

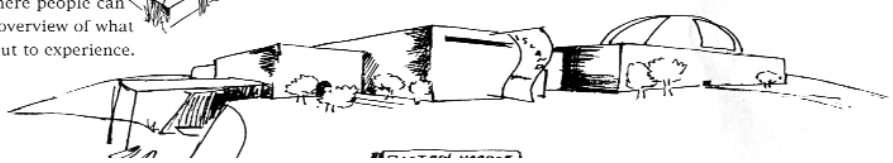
The general consensus at the Charrette was that we should "share the islands" with the birds and other animals that exist on the islands already. Humans are guests in their home, not the other way around. We want animals to be around on the islands for our kids to see and enjoy. Harming one animal species could disrupt an entire ecosystem. Some ways to educate people and preserve the islands is to:

- Educate island visitors both before and after they arrive on the islands.
- Post and announce on loud speakers on the boats as visitors are travelling to the islands about basic island regulations.
- Place small displays of the wildlife that exist on that particular island. This could foster awareness and respect for the island's ecology.
- Create an interactive "eco-station" on the island just before you hit the trails where people can get a broad overview of what they are about to experience.

Charrette participants in general agreed that while reading about the islands and their ecology is one way to learn about them, it is much better to get out and "live" the island first hand (i.e. actually exploring a salt marsh or feeling and seeing a bayberry bush). To run hand in hand with this idea, one well received suggestion was building a museum on a central, accessible island that can be developed. The museum would encompass the many diverse aspects of the islands including: natural history/ geology, current ecology, archeology, Native American history, Colonial history, history of immigrants on the Islands; past, present and future states of the Boston harbor; military history of the islands and the myths and stories encompassing the Islands.

The overall theme for preservation, education, geology and history is to foster awareness and respect for the islands and their incredible history. Introduce and repeat the message whenever and wherever possible... in the schools, on duck and trolley tours of the city; on walking tours; on bus and train signs so people know what to expect on a visit. **"A true environmentalist respects the balance of interests among all life forms on the planet and recognizes that some interests are at times more compelling than others."** Author Unknown.





APPENDIX 14: GLOSSARY

access—Includes physical access and management of access on both islands and mainland. Applies to water transportation, land transportation, parking, connecting trails, financial, proximity to public transit lines, etc.

adaptive use—A use for a structure or landscape other than its historic use, normally entailing some modification of the structure or landscape.

camp site, primitive—A completely carry-on, carry-off site; "leave no trace" (composting toilets).

camp sites, improved—Potable water and other camping amenities provided.

ecosystem management— Refers to the interdependence of natural and cultural systems, integrating scientific knowledge of ecological relationships with resource stewardship practices.

environmental assessment (EA)—A concise public document prepared by a federal agency to satisfy the requirements of the National Environmental Policy Act of 1969, as amended. The document contains sufficient analysis to determine whether the proposed action (1) constitutes a major action significantly affecting the quality of the human environment, thereby requiring the preparation of an environmental impact statement, or (2) does not constitute such an action, resulting in a finding of no significant impact being issued by the agency.

environmental impact statement (EIS)—A detailed public statement required by the National Environmental Policy Act when an agency proposes a major action significantly affecting the quality of the human environment. The statement includes a detailed description of the proposed action and alternatives, as well as the identification and evaluation of potential impacts that would occur as a result of implementing the proposed action or alternatives.

general management plan (GMP) — (NPS term) A document that provides clearly defined direction for a park for resource preservation and visitor use over 15 to 20 years. It gives a foundation for decision-making and is developed in consultation with program managers, interested parties, and the general public. It is based on analysis of resource conditions and visitor experiences, environmental impacts, and costs of alternative courses of action.

gateway— A mainland waterfront location providing boat service and visitor orientation to the islands. Gateways should be located near public, multi-modal transit systems including highways, bikeways, and ferries; provide parking; and contain uniform park identity and directional signs, and visitor amenities such as seating and shade shelters. Some gateways may be staffed and contain a visitor contact station and sales of souvenirs and park-related items for visitor comfort and information.

hub— term used for the islands where ferries arrive from the mainland. They may have a lot of activities; and can accommodate many people. Hubs would provide orientation to the islands, have food, restrooms, water, and possibly sales items related to the islands.

integrated resource management plan — The term used in the enabling legislation for a general management plan.

management plan— The statute establishing the Boston Harbor Islands National Recreation Area calls for an "integrated resource management plan" for the park. This name has been shortened to management plan, and it is the same as a "general management plan" in the National Park Service. Such a plan is expected to provide viable policy guidance for 15 to 20 years.

mission goals (NPS term; formerly called management objectives)— Goals stating the ideal conditions to be attained or maintained; expressions of desired future conditions. Together with the mission statement, they precede and direct decisions about specific park conditions.

mission statement (NPS term)—A concise statement that incorporates park purpose (the specific reasons the park was established) and significance (a description of the park's distinctiveness and importance nationally).

project manager (NPS usage)—In the Boston Harbor Islands national park area, equivalent to a superintendent.

preservation—The act or process of applying measures to sustain the existing form, integrity, and material of a historic structure, landscape, or object. Work may include preliminary measures to protect and stabilize the property, but generally focuses on the ongoing preservation, maintenance, and repair of historic materials and features rather than extensive replacement and new work. For historic structures, exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

rehabilitation—The act or process of making possible an efficient, compatible use for a historic structure or landscape through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, and architectural values.

restoration—The act or process of accurately depicting the form, features, and character of a historic structure, landscape, or object as it appeared at a particular period of time by means of removing features from other periods in its history and reconstructing missing features from the restoration period.

stabilization—An action to render an unsafe, damaged, or deteriorated property stable while retaining its present form.

sustainability—A process that integrates economic, environmental, and equity (health and well-being of society) activities in decisions without compromising the ability of present and future generations to meet their needs.

viewshed—The area that can be seen from a particular location, including near and distant views.

water shuttle—Small vessel operating between islands on an established schedule.

water taxi—Small vessel available for hire, on-call, for short trips between mainland and the islands.

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Lance Campbell, Boston Redevelopment Authority; Chang-Ming Chen; Friends of the Boston Harbor Islands; John Forbes; R. Hasenstab; Alex S. MacLean, Landslides; Ken Mallory, New England Aquarium; Metropolitan District Commission; National Park Service; John Nove; Save the Harbor/Save the Bay.